

URBAN FLORAS: a contribution to biodiversity

RSE
The Royal Society
of Edinburgh
KNOWLEDGE MADE USEFUL



Taylor & Francis
Taylor & Francis Group



Is Green Consciousness a pre-condition for Urbanity?

Prof Brian M Evans

**GLASGOW
URBAN LAB
THE GLASGOW
SCHOOL OF ART**

Geneva UN Charter
Centre of Excellence

SMART SUSTAINABLE CITIES



UNECE

THE TRANS-ALASKA PIPELINE





GENIUS LOCI

The spirit of place

Breathes there the man with soul so dead,
Who never to himself has said/This is mine own, my native land,
Oh Caledonia, stern & proud, milk nurse to a poetic child.





Andrew Leitch 2013

Ardtornish Point





The Highlands and the Roots of Green Consciousness, 1750 - 1990

Chris Smout

A resource for *LIVING*

crofting, farming, fishing, forestry

A resource for *SPORT*

huntin', shootin', fishin'

A resource for *INDUSTRY*

power, mining, minerals, power generation

A resource for *NATURE*

post-modern refuge for people and planet

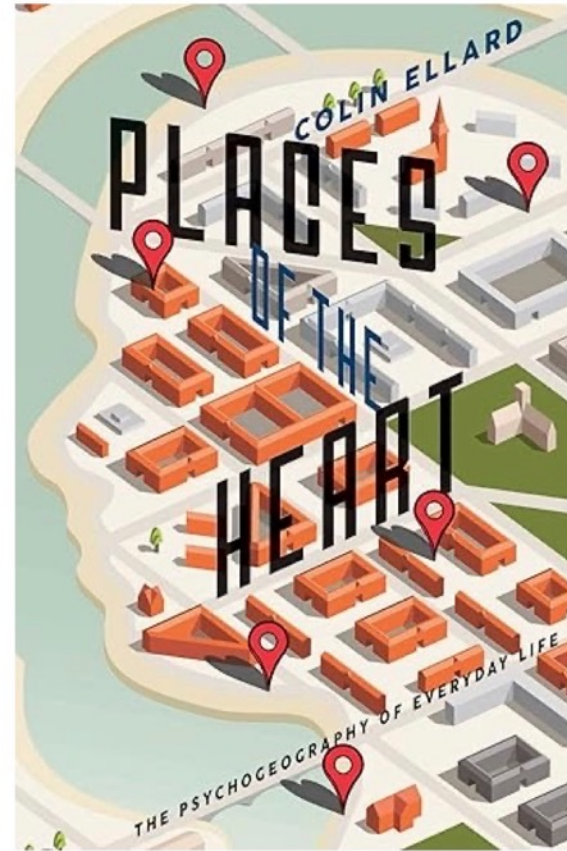
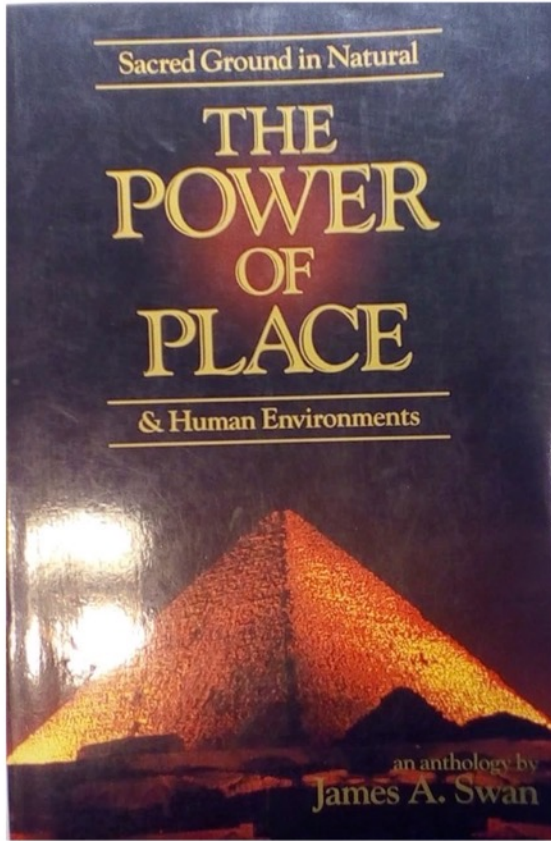


Louisiana
Humlebaek









The Ubiquity of Place

Place is everywhere, places are all around us. Everywhere is some place. Place is a general construct, a concept that gives everywhere some qualities, some specificity whether cultural, social, environmental or economic. And these in turn connote other qualities – ceremonial, beautiful, tranquil, vibrant, community, busy, unloved places.

“Place is one of the most multi-layered and multi-purpose words in our language.”

Alessandro dell’Orto

Intervention by Design? Some Principles

Composition

Proportion

Form

Line

Light

Materiality



Outcomes

Beautiful?

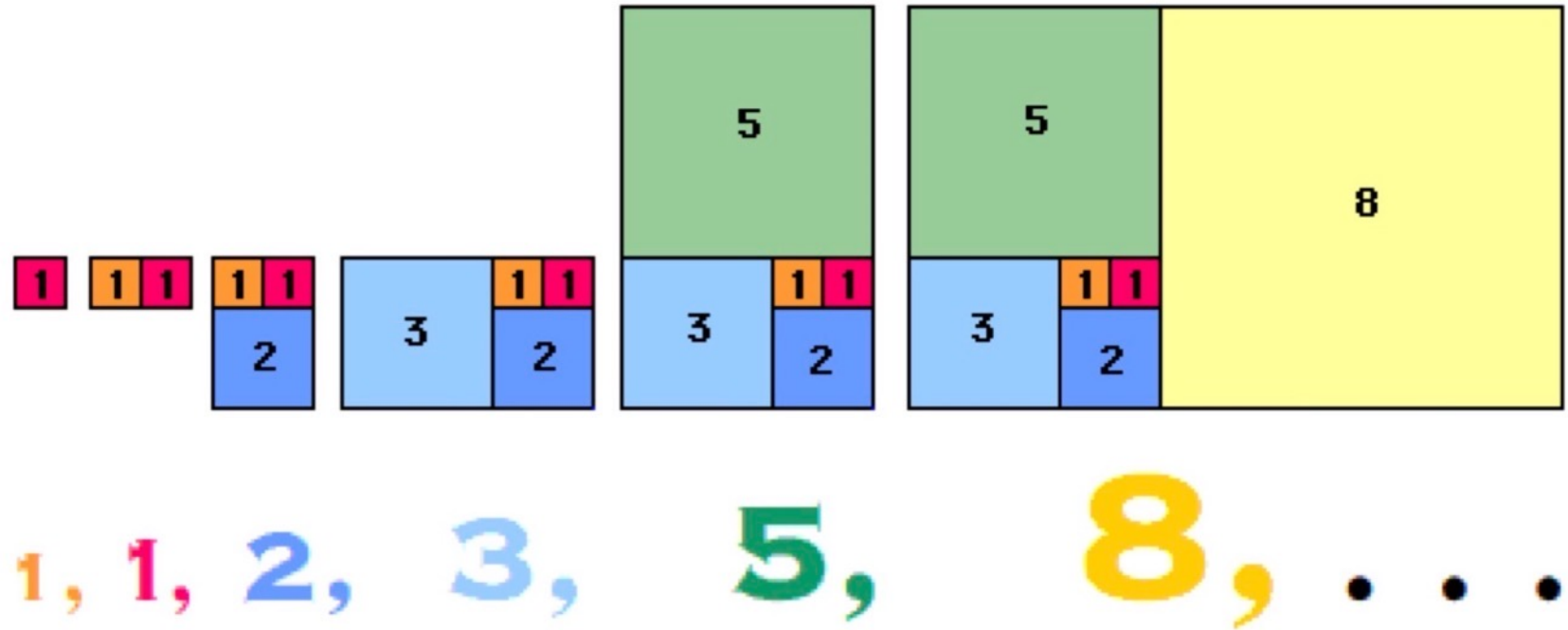
Ugly?

A Place?

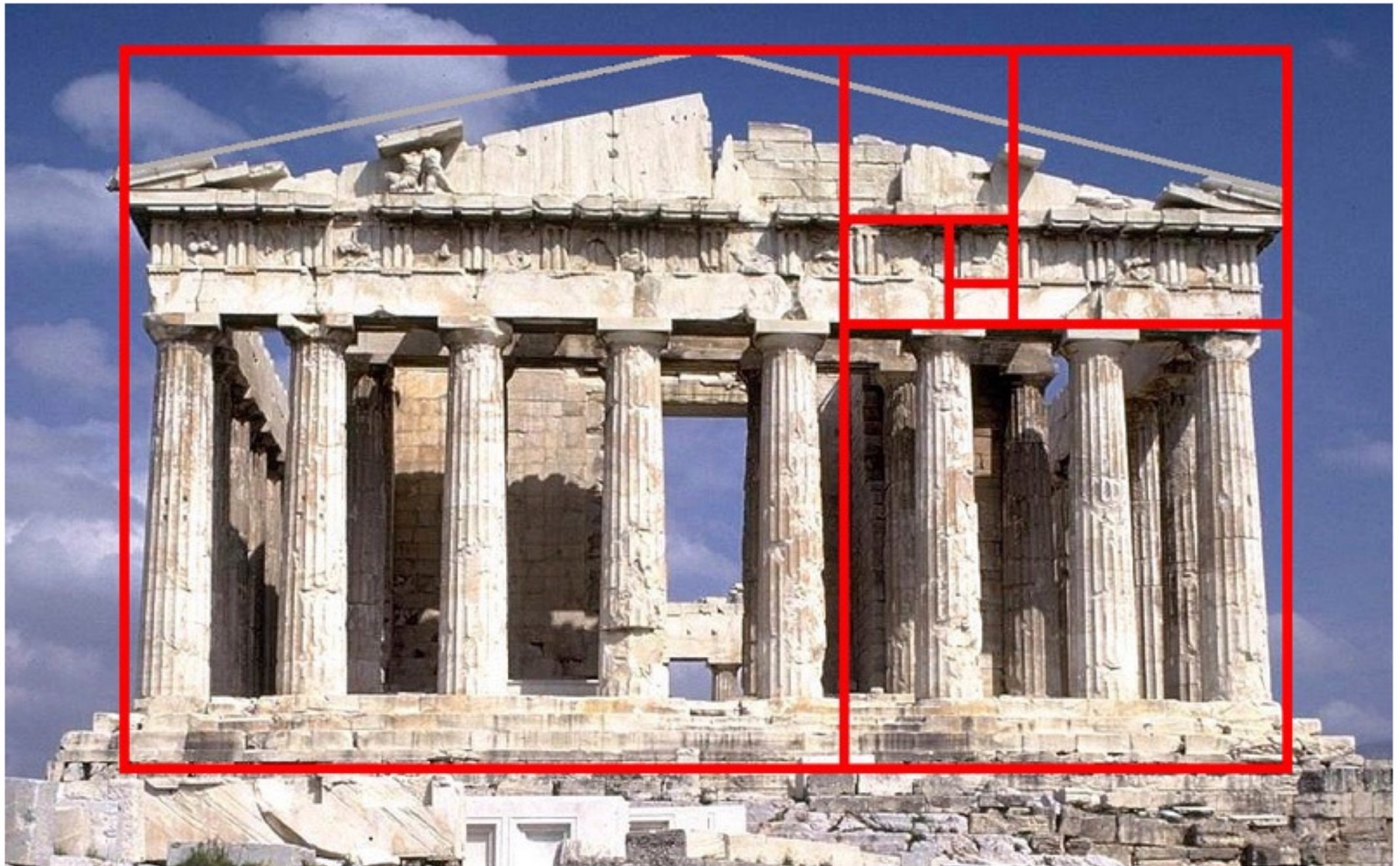


The Fibonacci Sequence
is used to create ... the
Fibonacci Rectangle ...

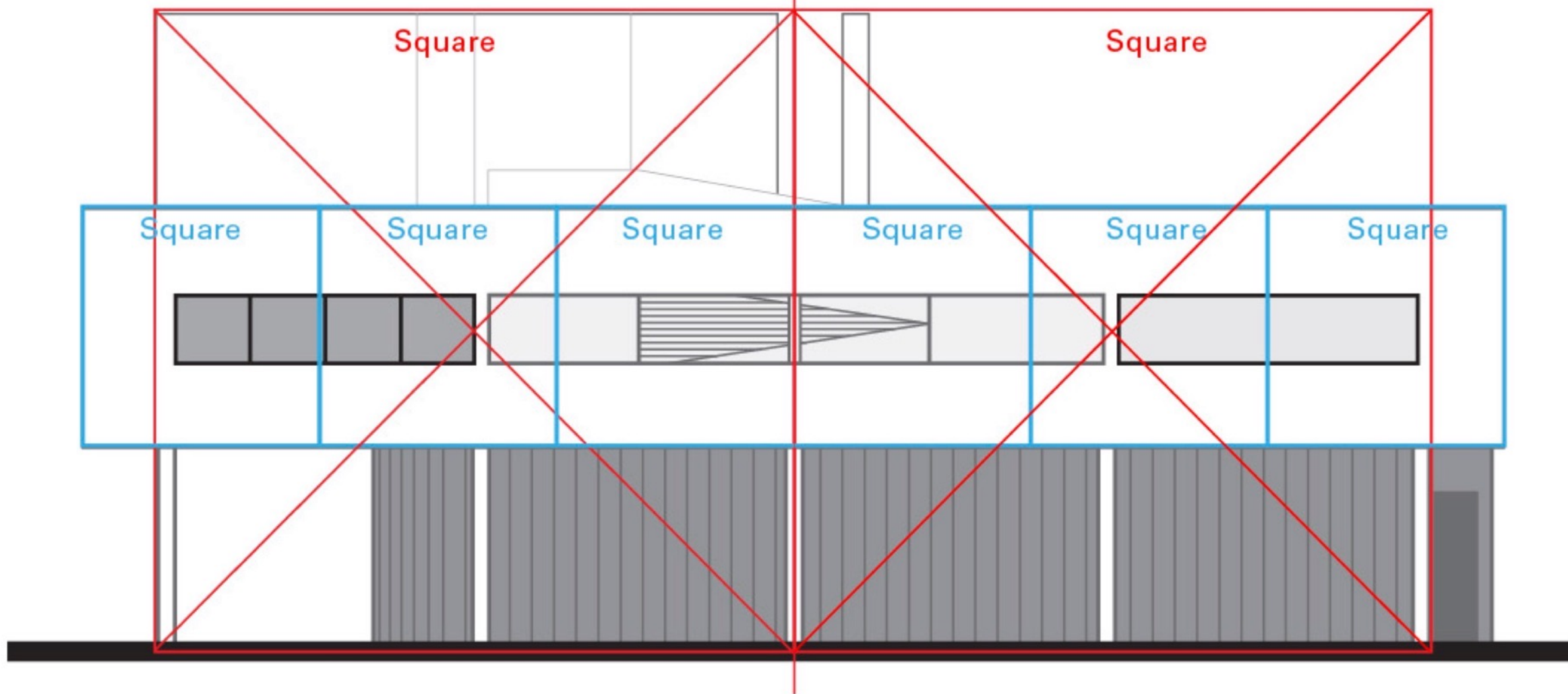
... which is used to
create the Fibonacci
Spiral ... seen
throughout the Natural
World



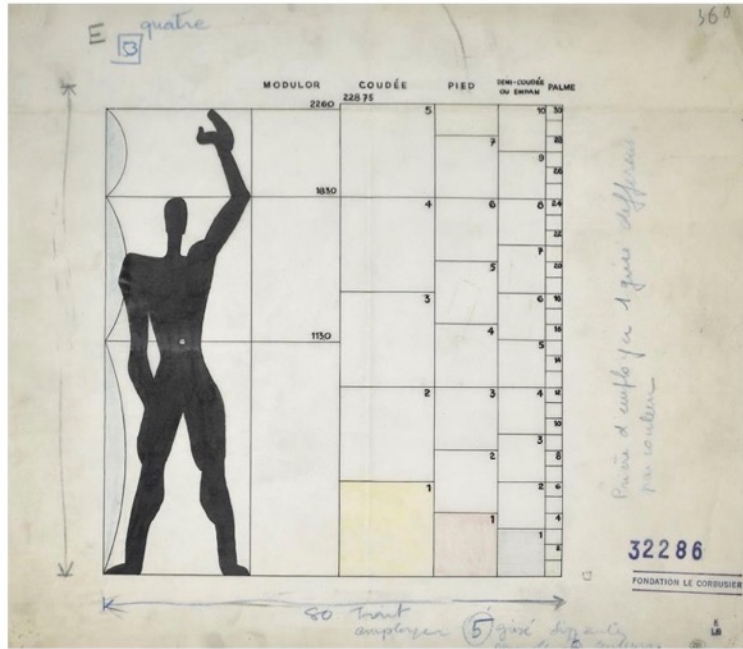
THE GOLDEN RATIO – 1 to 1.618



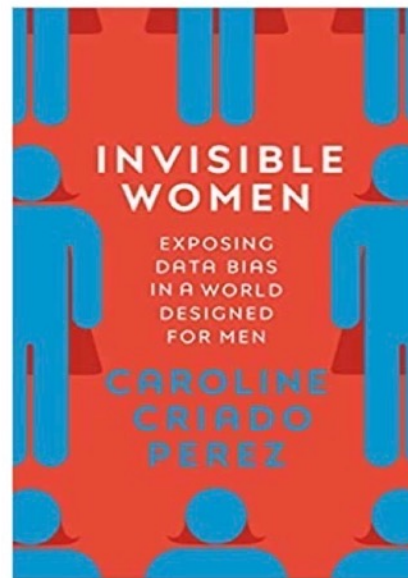
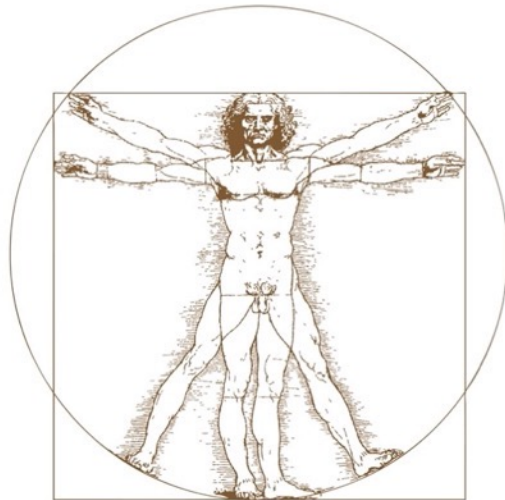
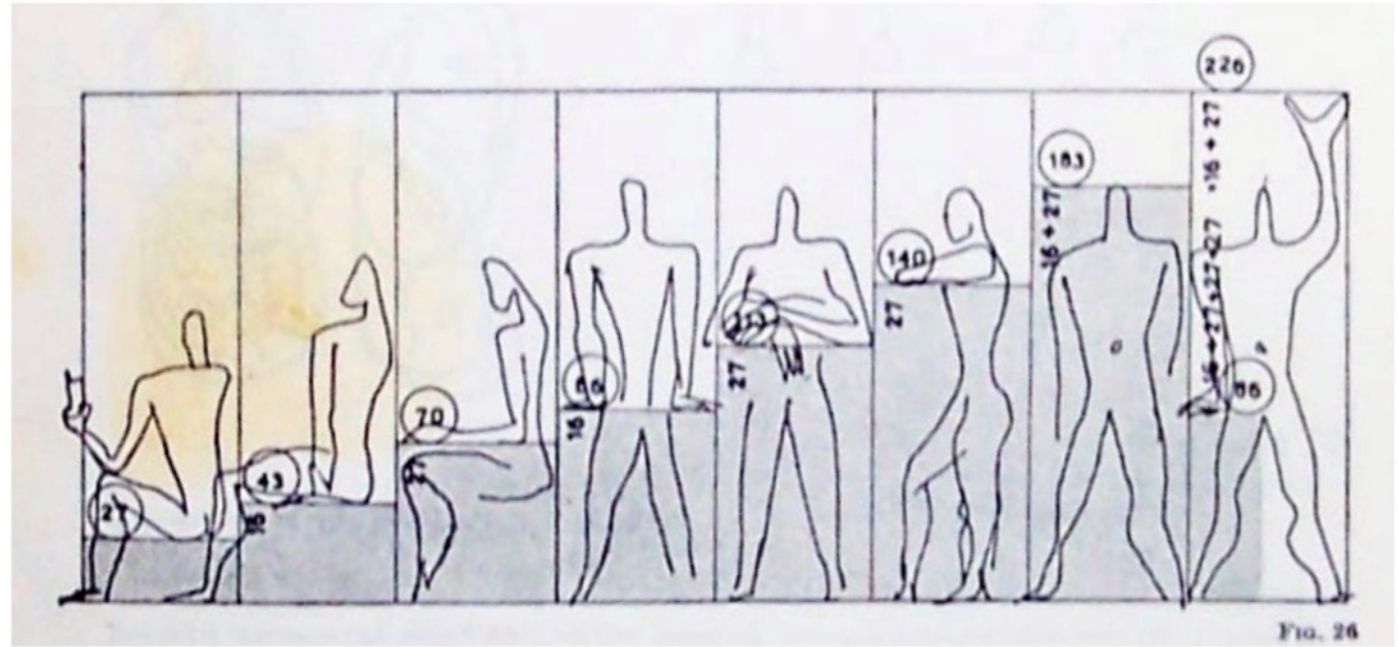
Center Line



Le Corbusier



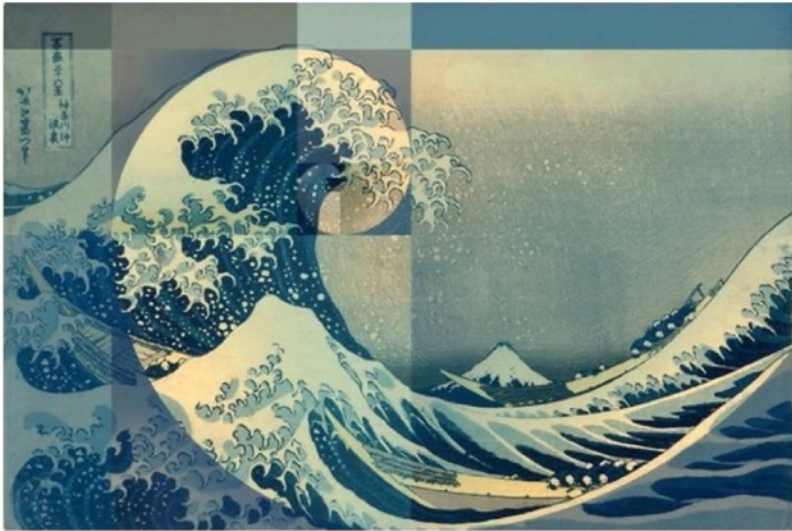
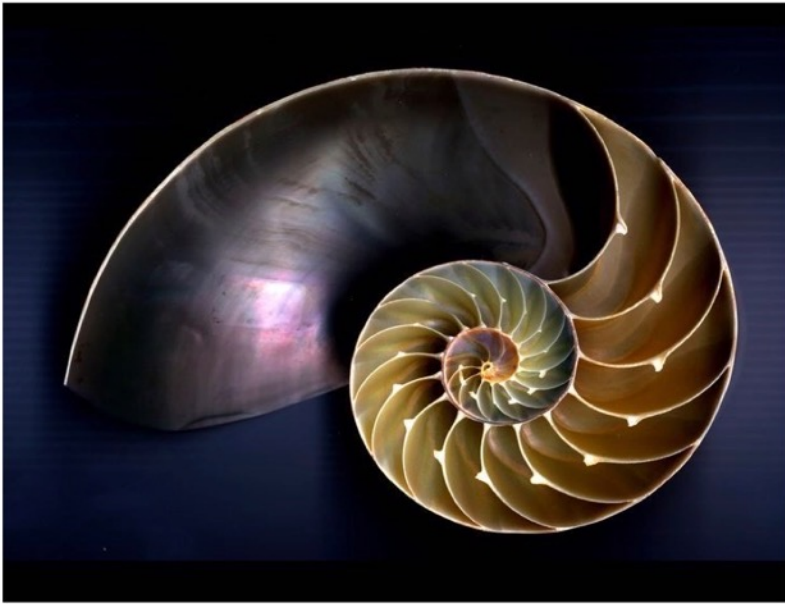
"Modular Man ..."



... and "Invisible Woman"

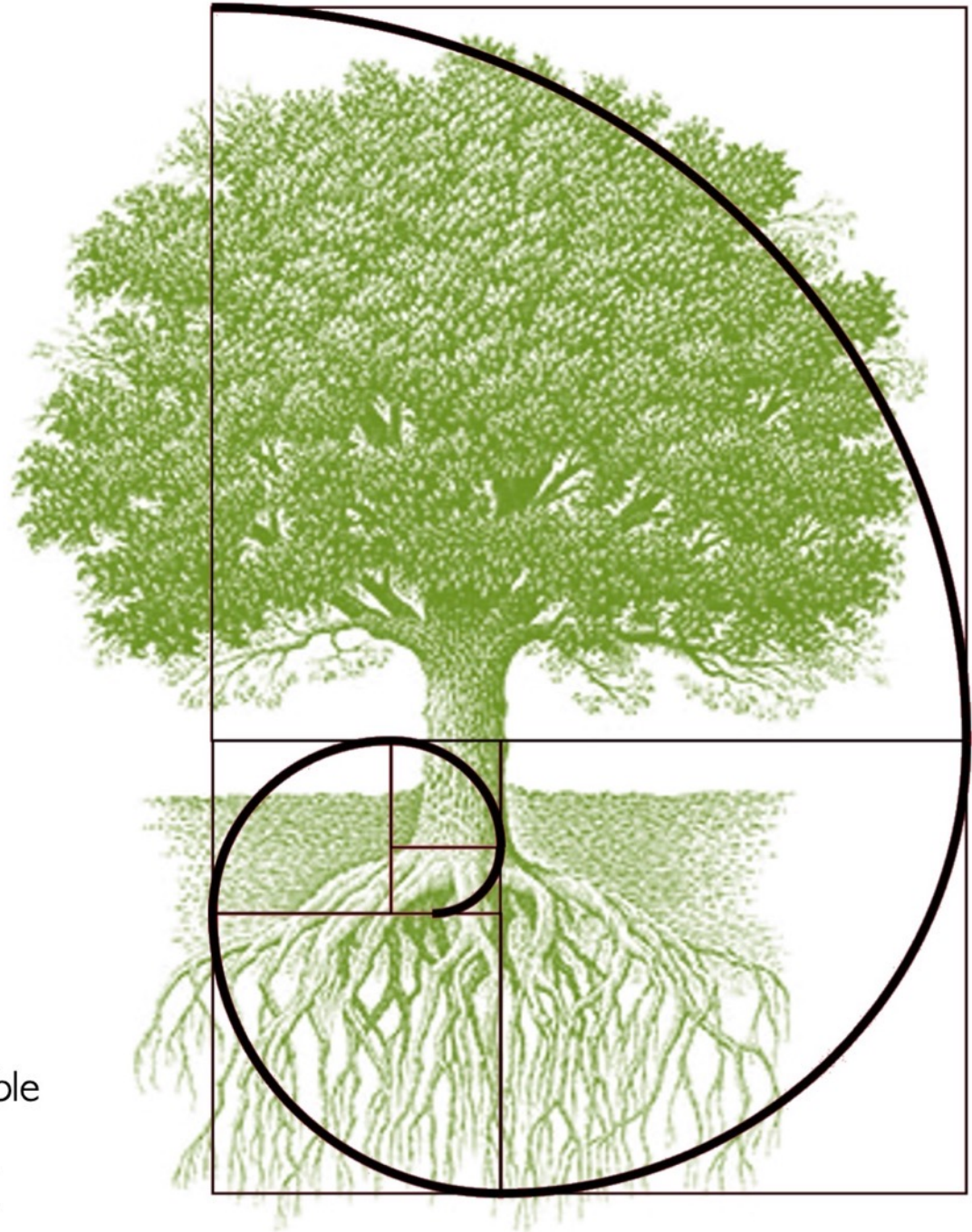
Exposes data bias in a world designed for men ...
the gender politics of knowledge & ignorance.

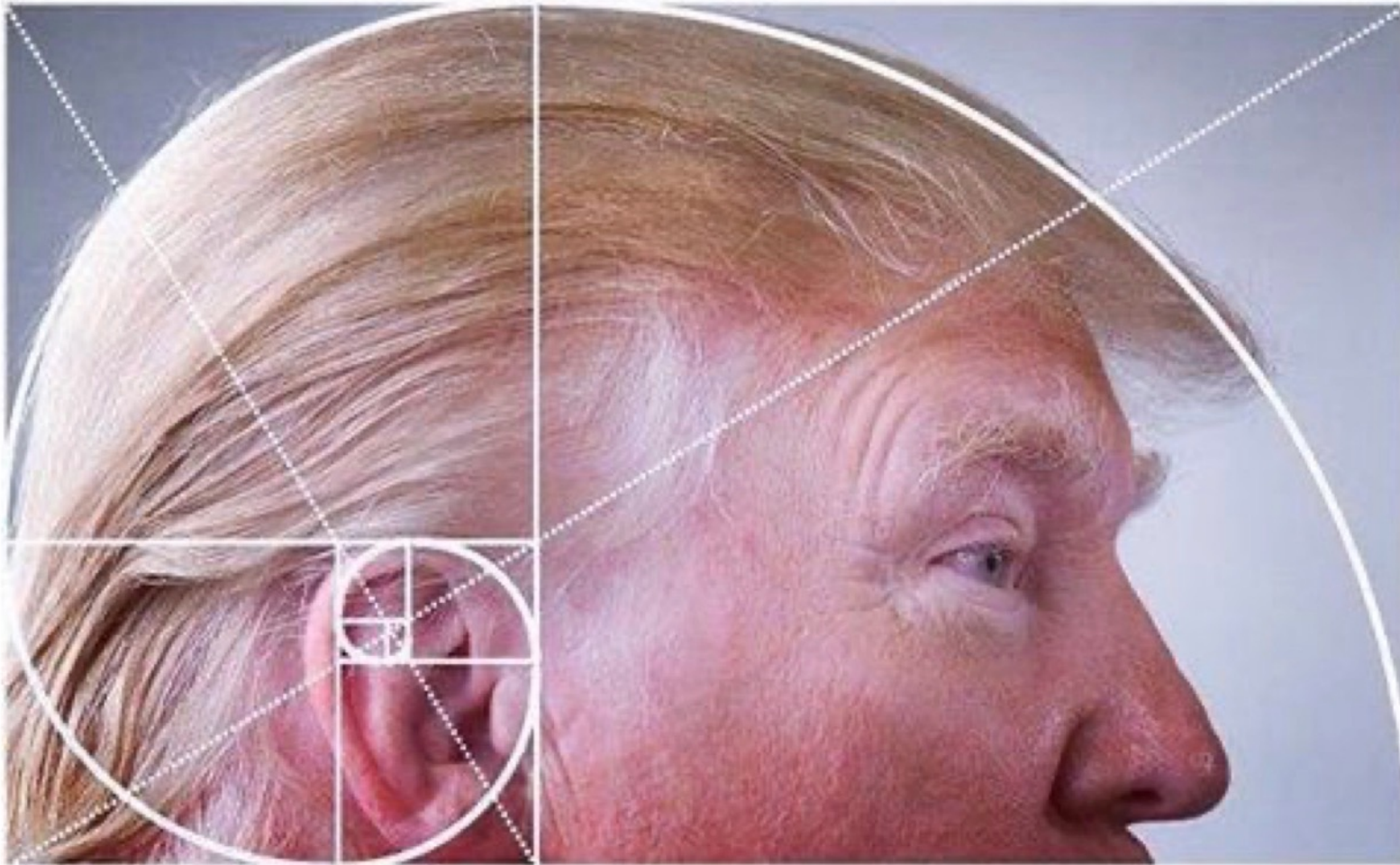
Caroline Criado Perez



The Fibonacci sequence and the golden ratio are invaluable **tools** to help us **understand and imagine** form and proportion...

Evans, February 2021

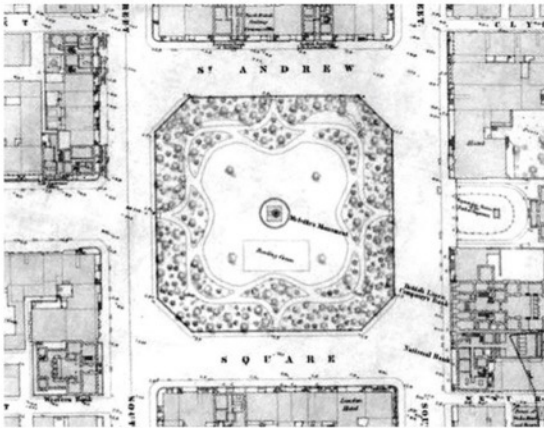
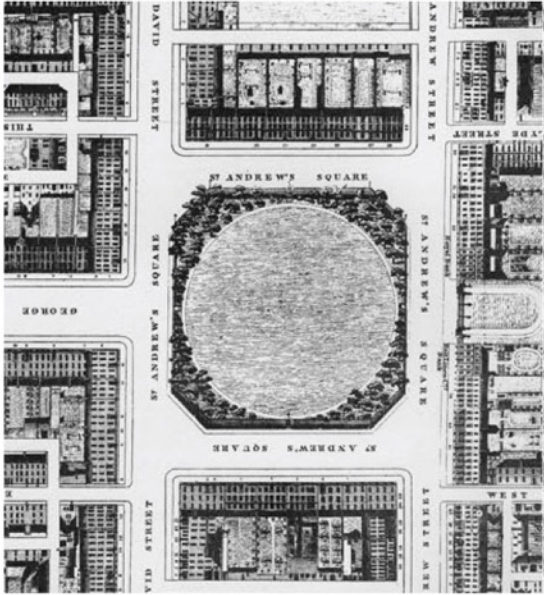




Mathematicians since Euclid have studied the properties of the golden section, to analyze the proportions of natural objects as well as man-made systems ... ***but we should always recognise the risk involved in “reductio ad absurdum” ...***

Brian Evans, February 2021

ST ANDREW SQUARE EDINBURGH

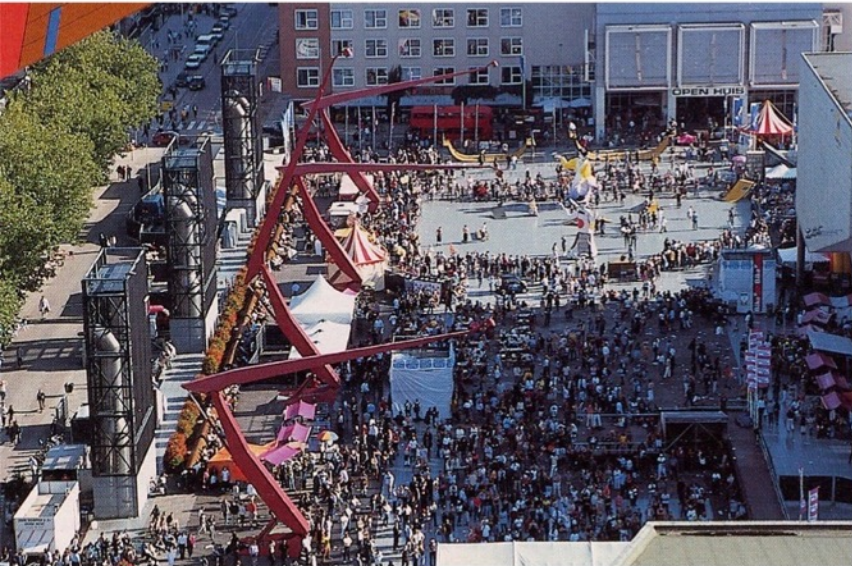


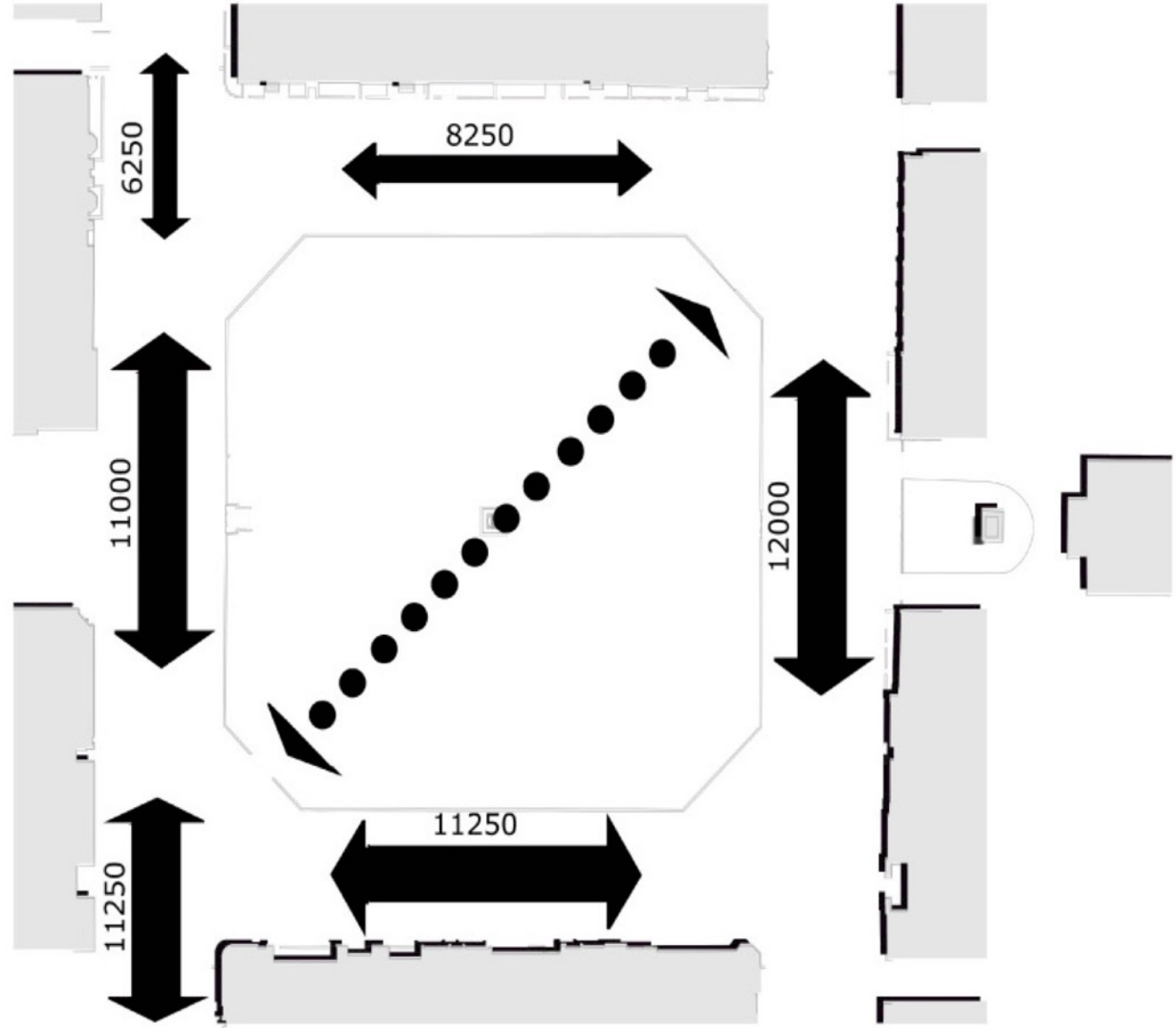
1. To recovery of the original qualities of the Georgian Square;
2. To provide permanent opening to the public throughout the seasons and throughout the week;
3. To become a focal point for use during the Edinburgh International Festival;
4. To ensure that design and access was appropriate to 21st century standards; and
5. To fit the Square within the principal desire lines of the present new town to ensure activity in use.

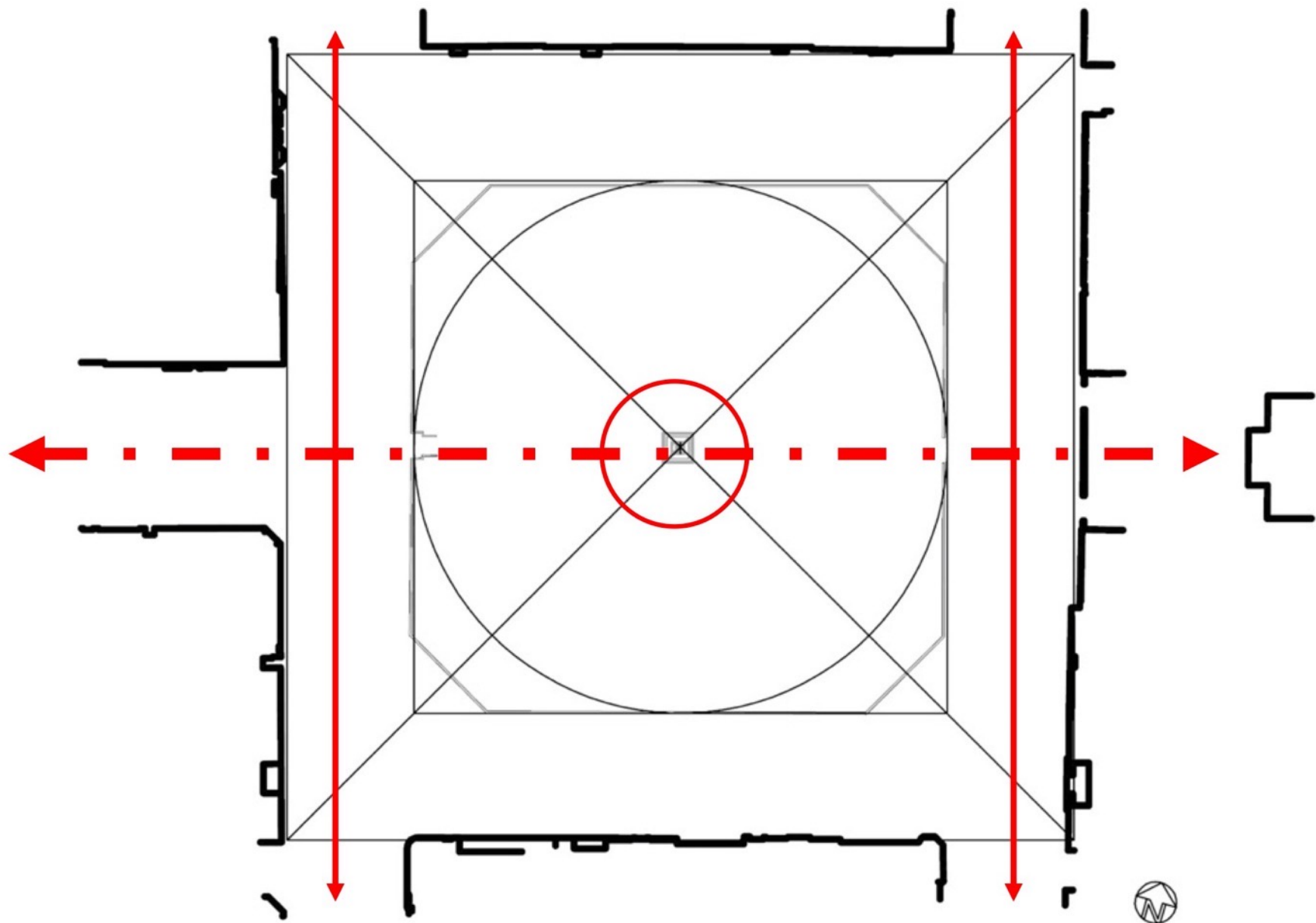
DESIGN DEVELOPMENT

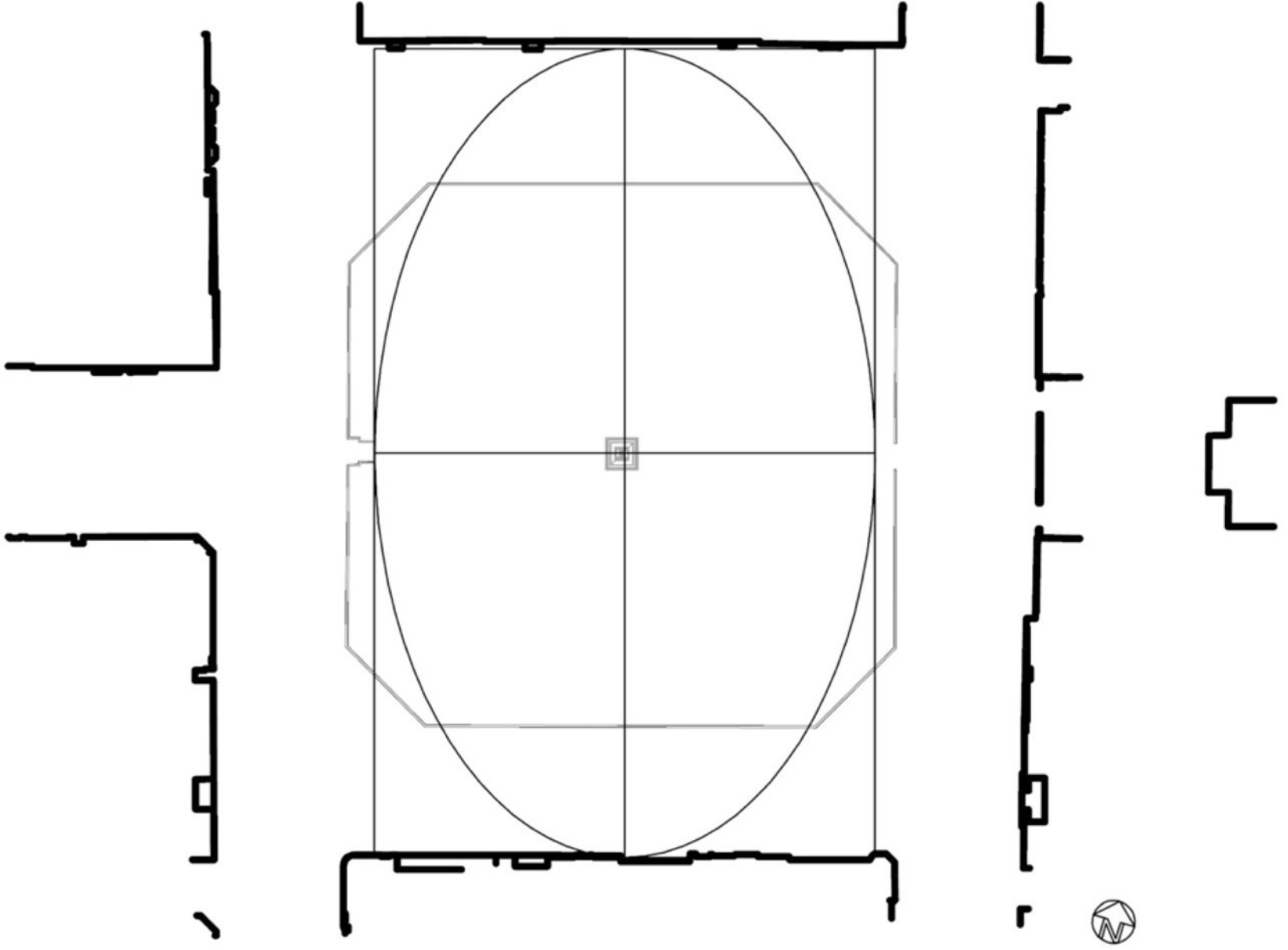
RECONCILIATION OF CONTRASTS

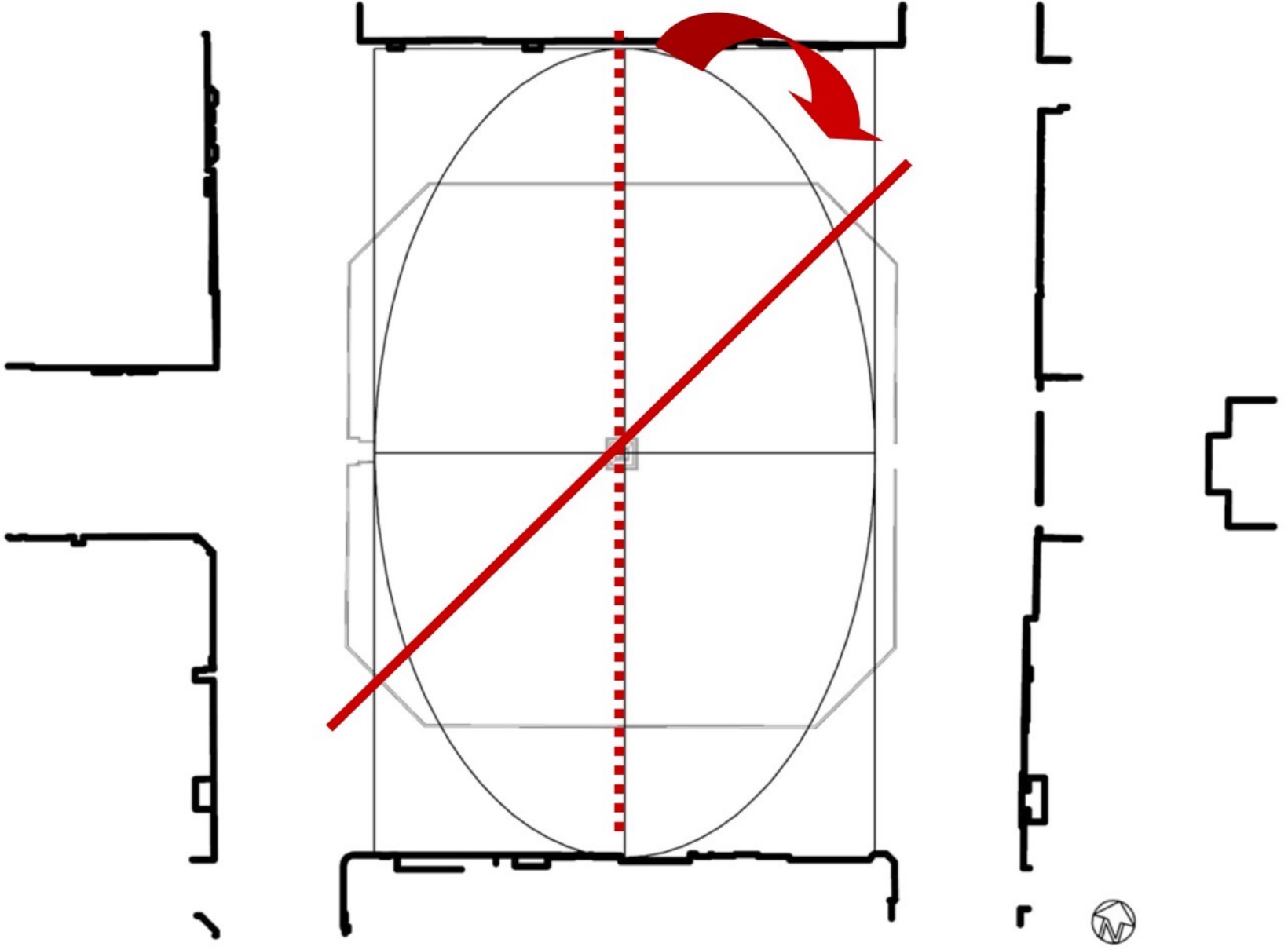
- Architecture
- Hard
- Formal
- Public
- Classical
- Active - Day
- Lively - Movement
- Sun - Dry
- Exposed
- Landscape
- Soft
- Informal
- Private
- Contemporary
- Passive - Night
- Tranquil - Rest
- Shade - Wet
- Enclosed

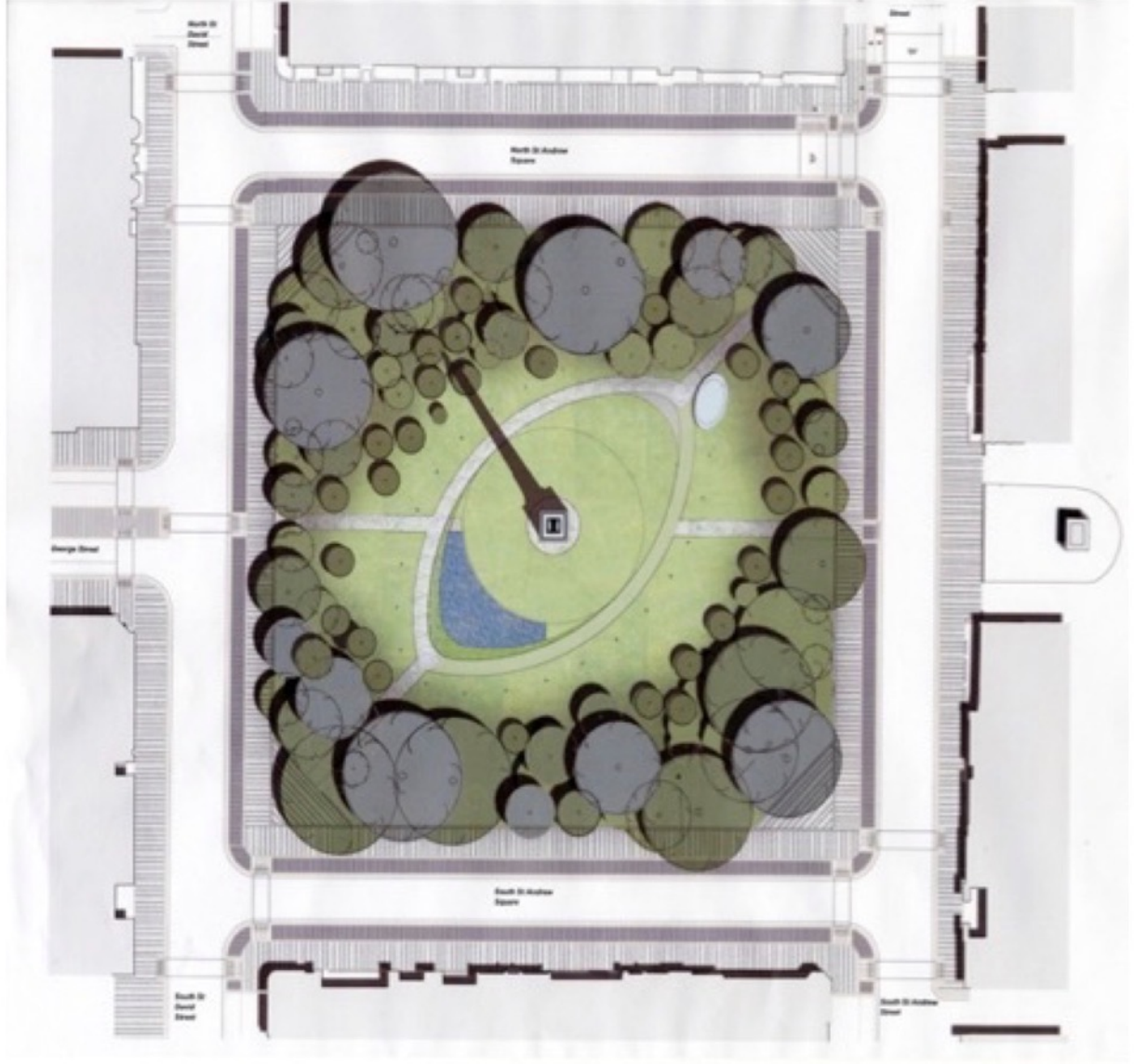
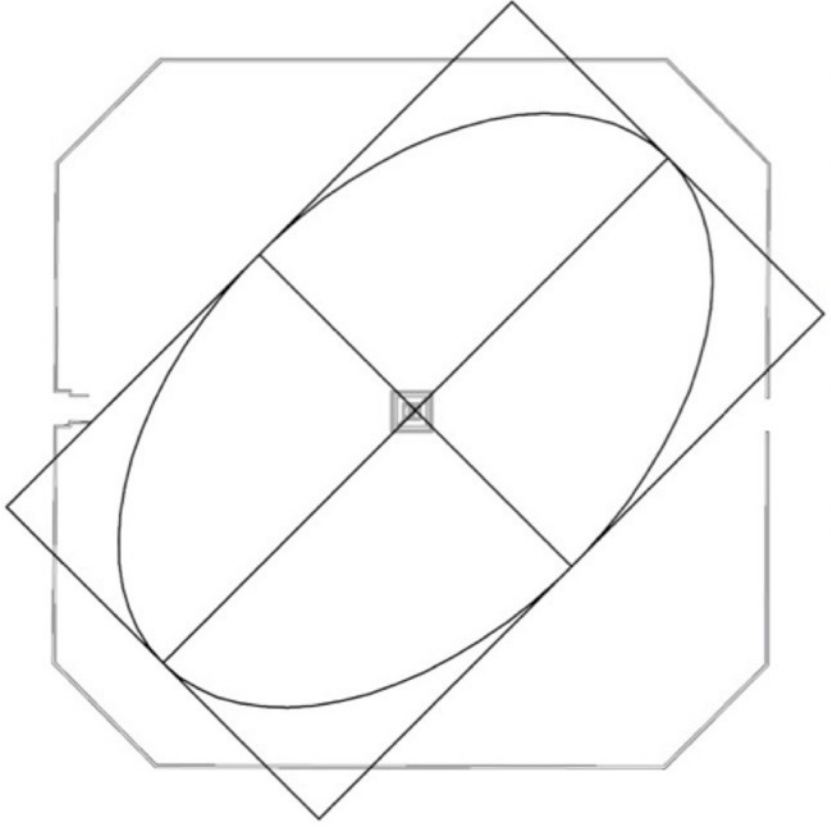


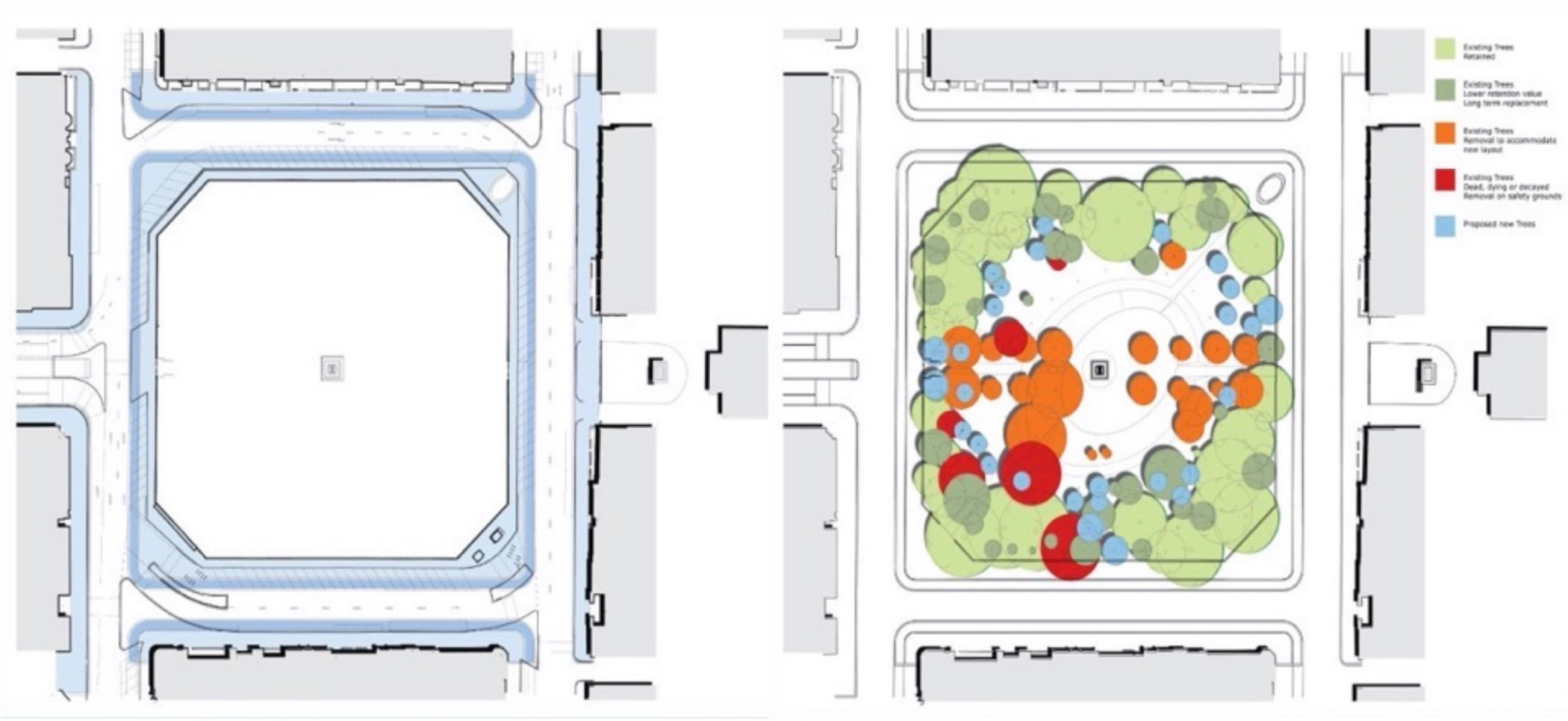






















Edinburgh New Town
2012 – showing
completed St Andrew
Square Garden as a
contribution to the
landscape of the
UNESCO World
Heritage Site

2009

Best Landscape Design Under 1 Hectare, Landscape Institute

President's Award (Best Landscape Design Project in the UK), Landscape Institute

Urban Green Space, Runner up, Local Government News,
Street Design Awards

Civic Trust, Commendation

Scottish Planning Award, Commendation

2007

Exhibited at the Royal Scottish Academy of Art & Architecture,
Annual Summer Exhibition

President's Award

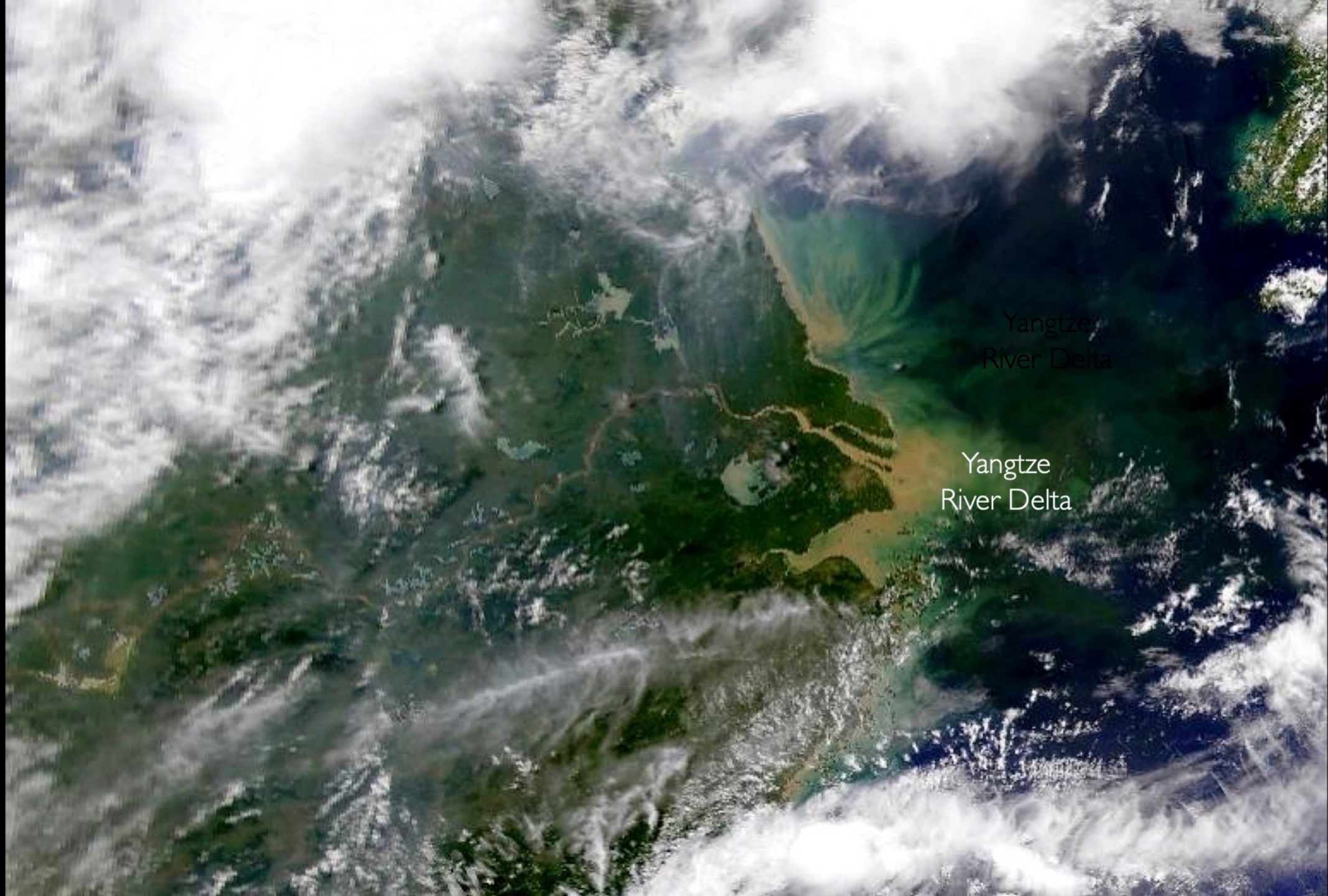
The Landscape Institute President's Award is made for the best landscape architecture scheme of the year.

St. Andrew Square, Edinburgh – Designed by Gillespies

"The landscape architect has produced a confident and convincing design for this world heritage site in the heart of Edinburgh. The completed scheme has proved a source of delight to local people and visitors alike, and is a splendid example of public space fulfilling its potential and contributing to the life of the city. The simplicity and elegance of the design belies the complexity of working in the public realm. It is an achievement to be proud of".

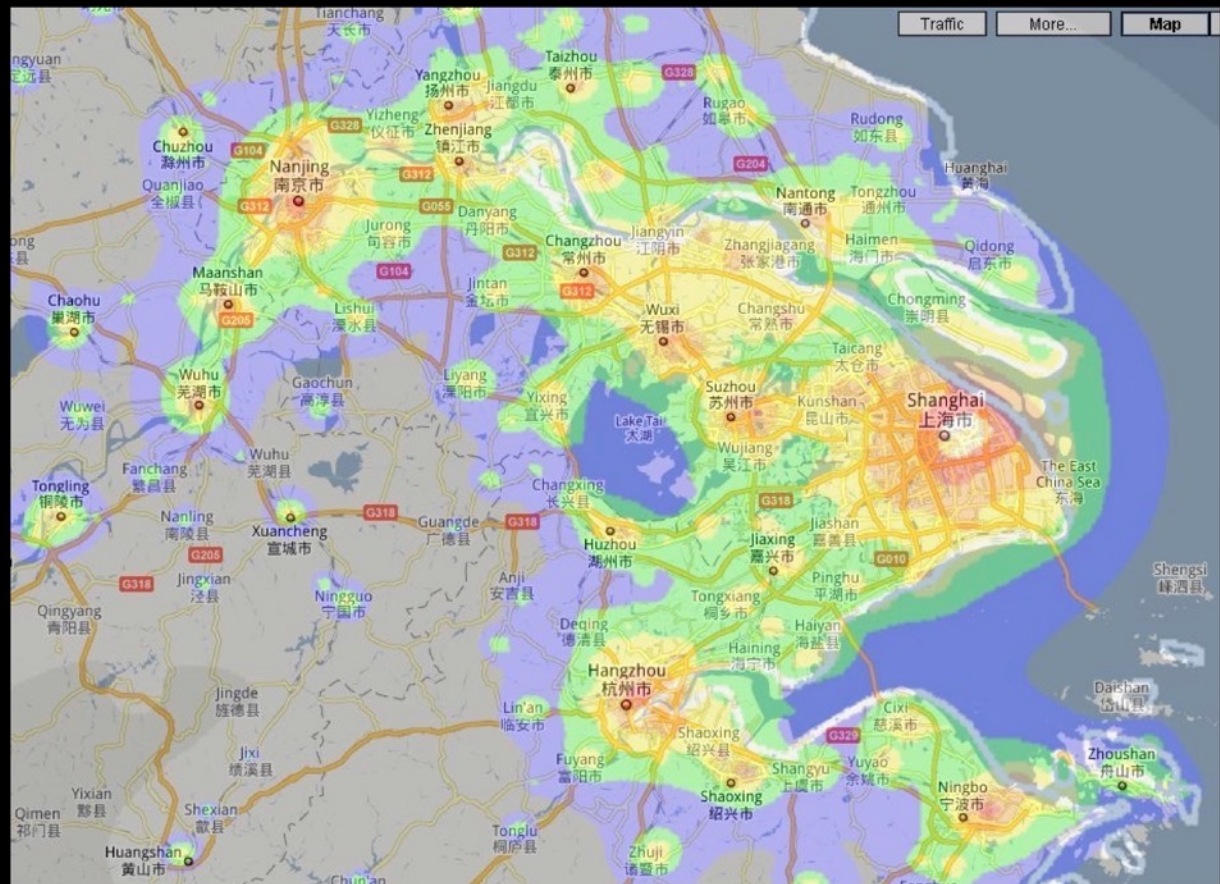
Neil Williamson FLI
President





Yangtze
River Delta

Yangtze
River Delta



1990



2010

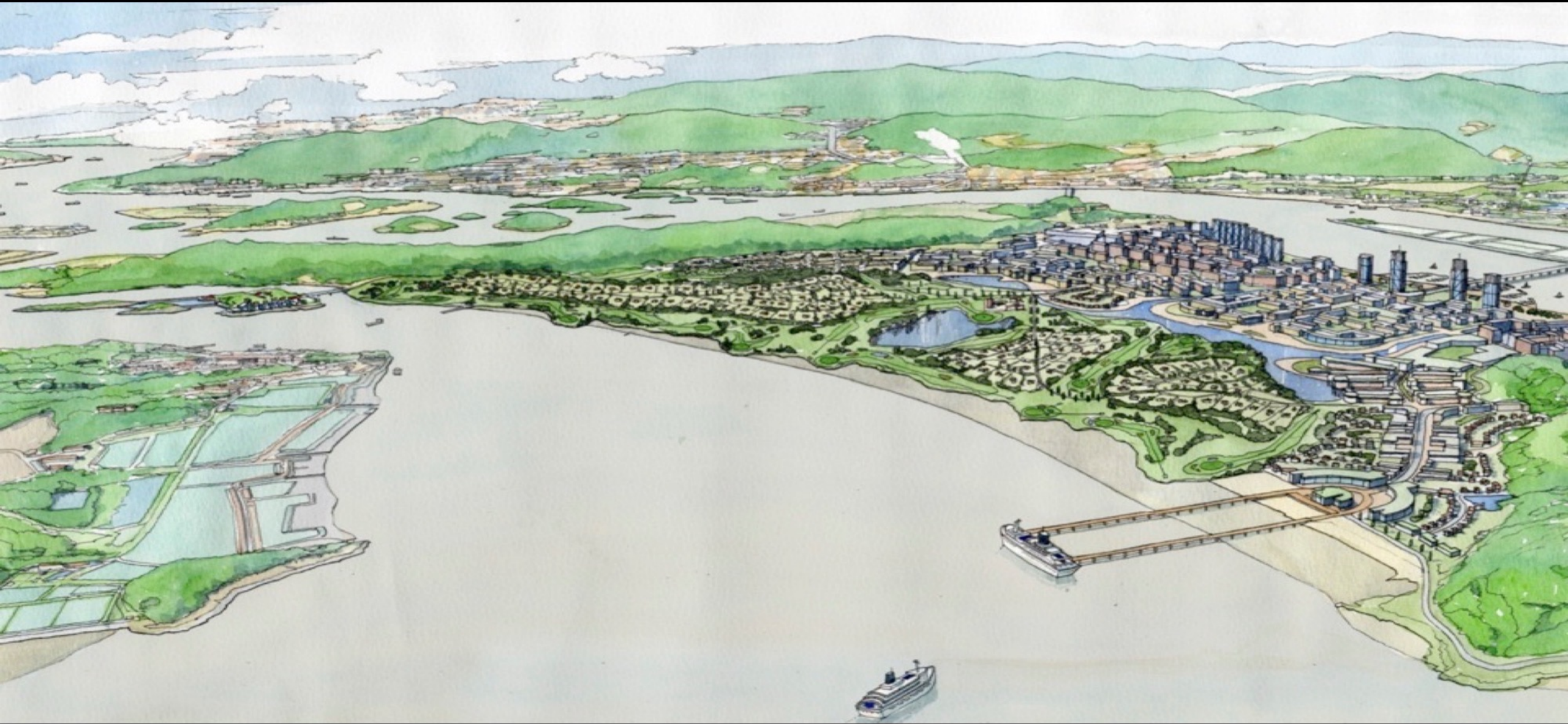






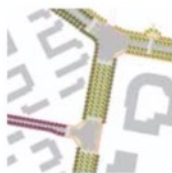












▲ Scheme design for new community parks and principal streets within the new community.



▲ Top: Model and implementation phasing plan

▲ Above – left and right: implementation of principal street and neighbourhood landscape proposals.



COMMUNITY ENGAGEMENT

Research & issues

Develop solutions & test options

Agree & refine proposals

Formulate plans & actions

ENGAGEMENT

Listening

Testing

Endorsing

Promoting

PROFESSIONAL ACTION

- environmental concern begets environmental action
- sensitive intervention requires design skill
 - intervene by design, not by regulation
- of people, by people, for people

THE LAND

THE PEOPLE

THE CITY

GENIUS LOCI

Spirit of the Place

ZEIGEIST

Spirit of the Times

Source: Frank Arneil Walker 1999

SUPPLY

Spirit of the Place

DEMAND

Spirit of the Times

Source: Frank Arneil Walker 1999

 **SUSTAINABLE DEVELOPMENT GOALS**

<https://sustainabledevelopment.un.org/>

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY




6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION




13 CLIMATE ACTION




14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS




SUSTAINABLE DEVELOPMENT GOALS

Transforming Our World – Agenda 2020: The Global Goals



Article 2:

comprehensive, far-reaching and **people-centred** universal and transformative goals and targets

Article 5:

integrated and indivisible to balance the three dimensions of sustainable development – economic, social and environmental

Systems Design

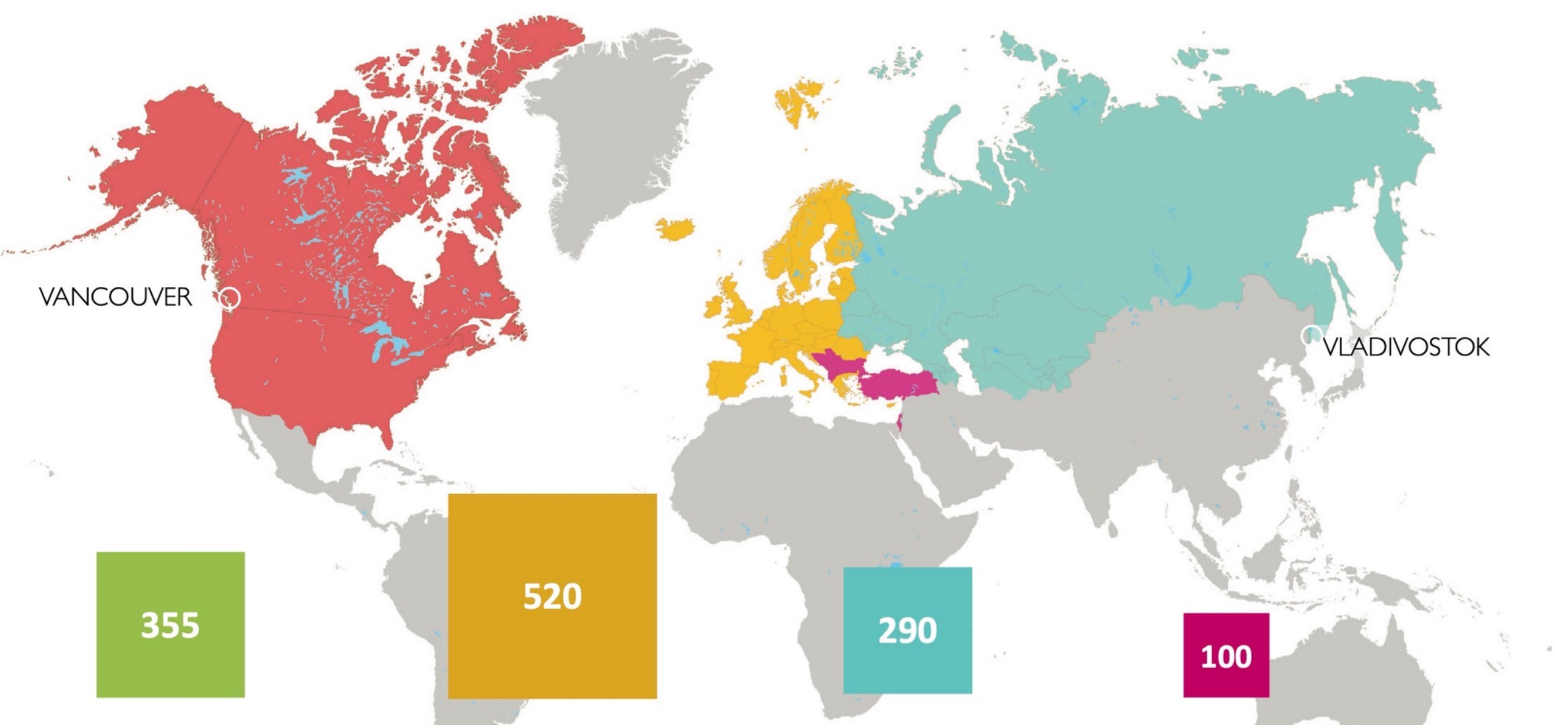
Transforming Our World – Agenda 2020: The Global Goals



Systems Design



Joan Clos: a paradigm shift from issue to action
HABITAT III – Focus on the **CITY** – ‘A NEW URBAN AGENDA’



North America

EU/EFTA

Eastern Europe, Russia,
Caucasus & Central Asia

South East Europe

The Territories of the United Nations Economic Commission for Europe (UNECE)



UNECE Region

- **56 Member States** – 4 sub-regions
 - **North America**
 - **Western & Central Europe** (EU & EFTA & 3 MS),
 - **Eastern Europe** (Belarus, Moldova, Ukraine), **Russia & The Caucasus** (Armenia, Azerbaijan, Georgia) and **Central Asia** (Kazakhstan, Kyrgyzstan, Tadjikistan, Turkmenistan, Uzbekistan)
 - **South-East Europe & Turkey & Israel**
- Home to 1.3 billion people (**17% of global population**)
- Approx. **45% of global GDP** and **66% of world's fresh water**
- 'The Global North'
- **263** cities of **500,000** or more

THE ARCTIC OCEAN LIES ENTIRELY WITHIN THE UNECE REGION

All the signatories of the Arctic Treaties are within UNECE

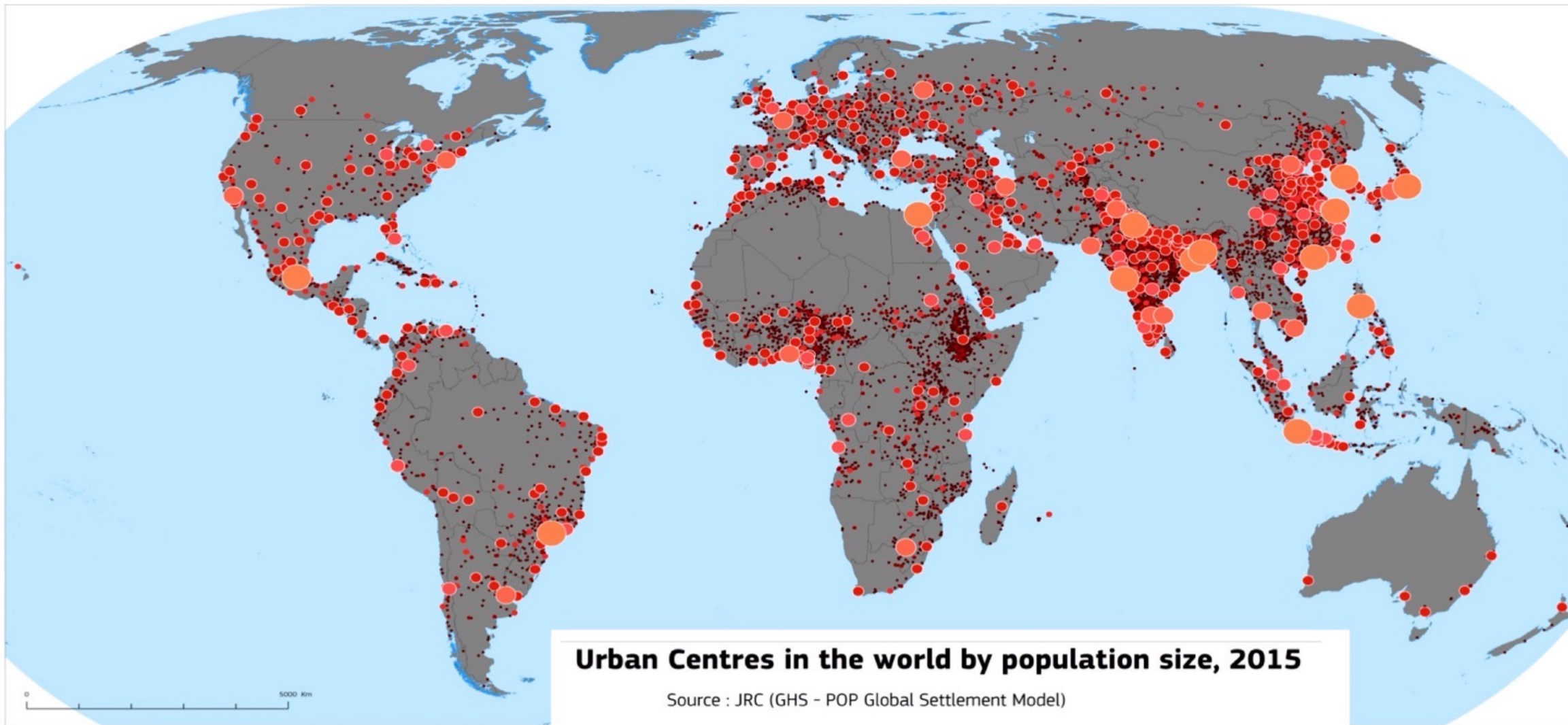




Population - Total

Source: McKinsey





Urban Centres in the world by population size, 2015

Source : JRC (GHS - POP Global Settlement Model)



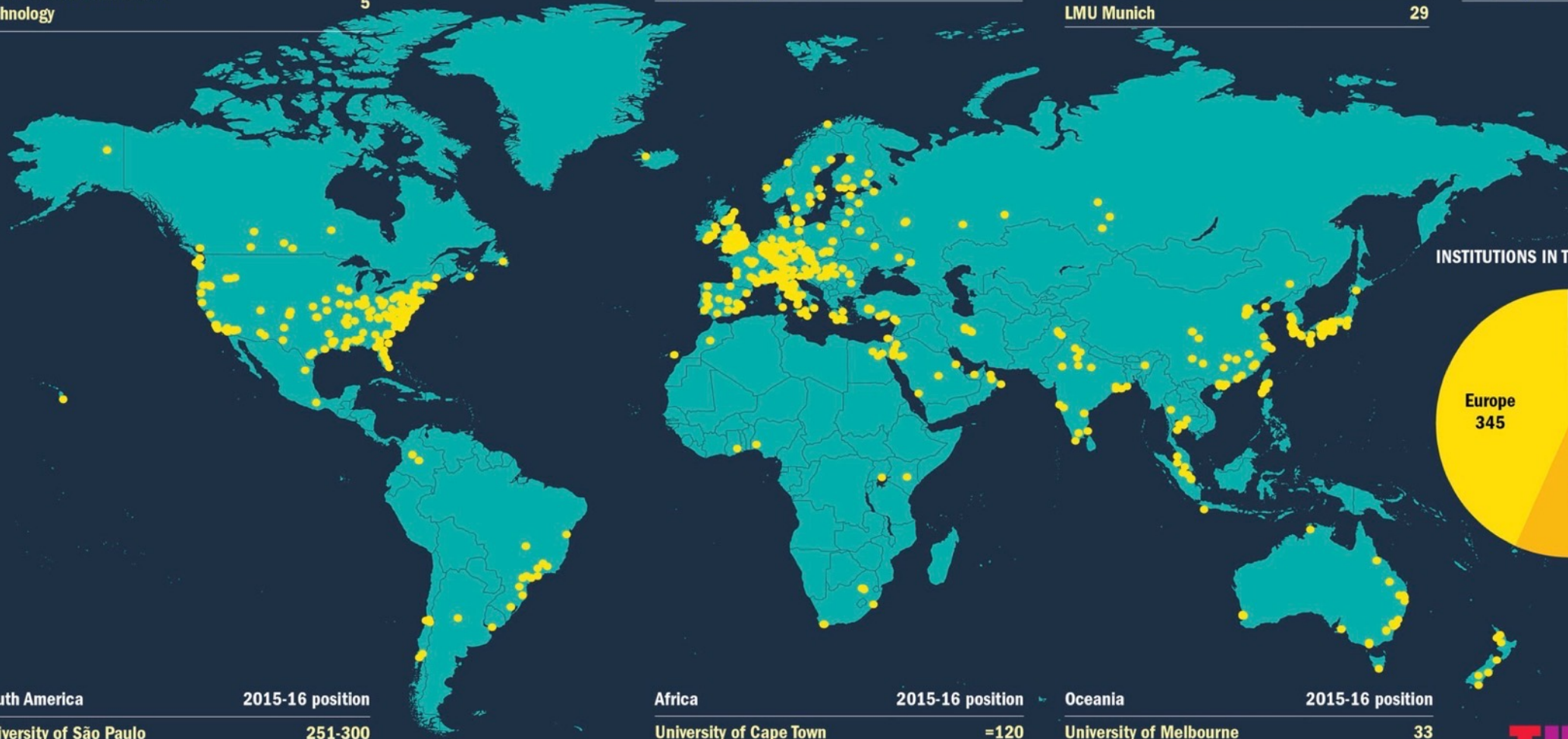


North America	2015-16 position
California Institute of Technology	1
Stanford University	3
Massachusetts Institute of Technology	5

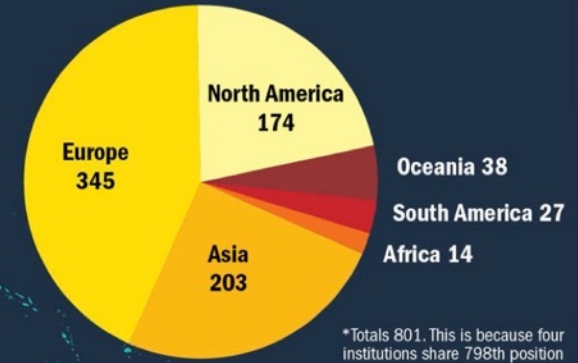
UK	2015-16 position
University of Oxford	2
University of Cambridge	4
Imperial College London	8

Europe (excluding UK)	2015-16 position
ETH Zurich - Swiss Federal Institute of Technology Zurich	9
Karolinska Institute	28
LMU Munich	29

Asia	2015-16 position
National University of Singapore	26
Peking University	42
University of Tokyo	43



INSTITUTIONS IN TOP 800 BY REGION*

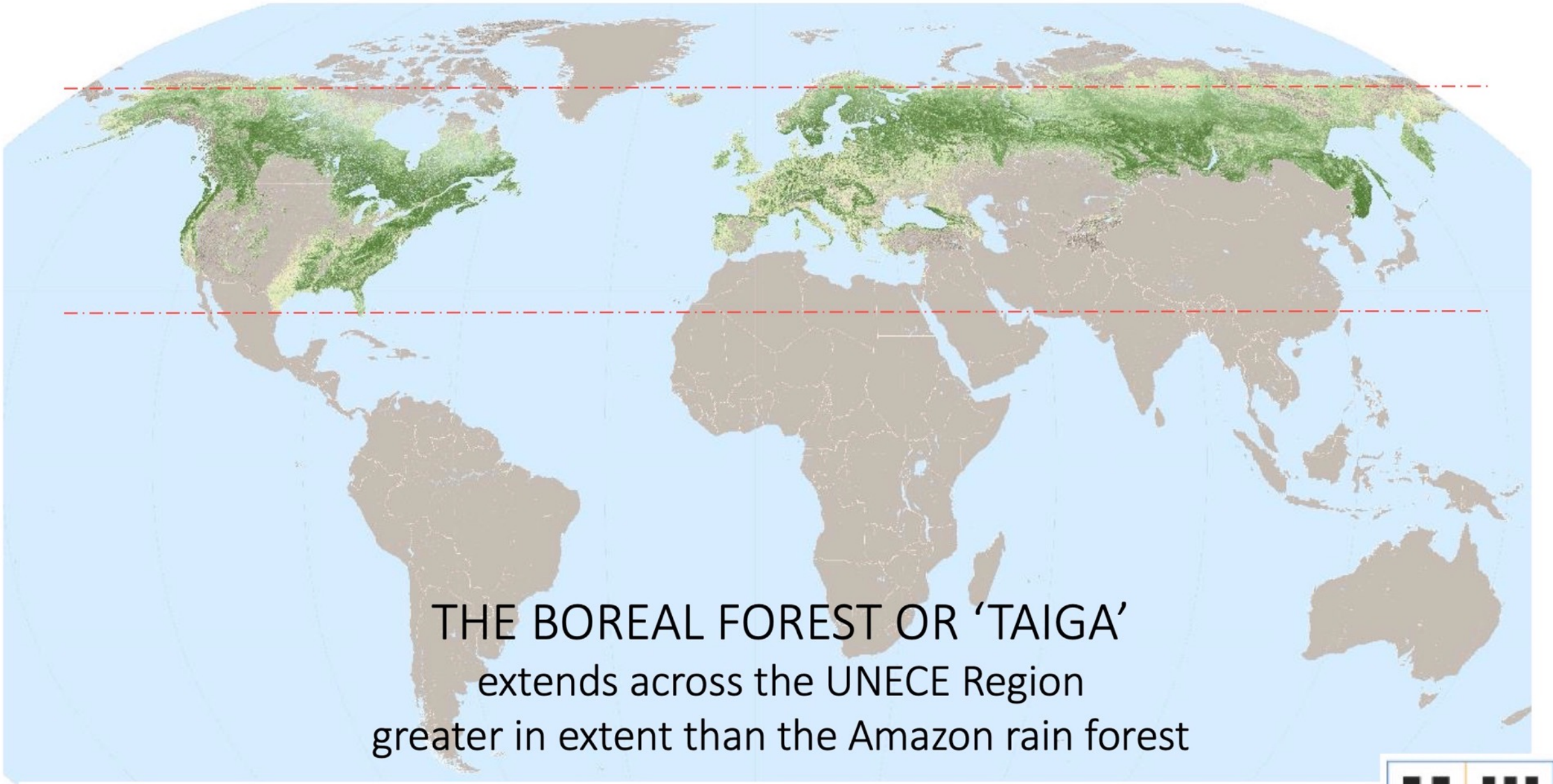


*Totals 801. This is because four institutions share 798th position

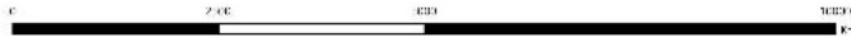
South America	2015-16 position
University of São Paulo	251-300
University of Palermo, Argentina	351-400
State University of Campinas	351-400

Africa	2015-16 position
University of Cape Town	=120
University of the Witwatersrand	201-250
Stellenbosch University	301-350

Oceania	2015-16 position
University of Melbourne	33
Australian National University	52
University of Sydney	=56



THE BOREAL FOREST OR 'TAIGA'
extends across the UNECE Region
greater in extent than the Amazon rain forest





HABITAT III Regional Report For the UNECE territory

**Towards a city-focused,
people-centred
and integrated approach
to the New Urban Agenda**

Demographics:

Longer Lives – Lower Fertility



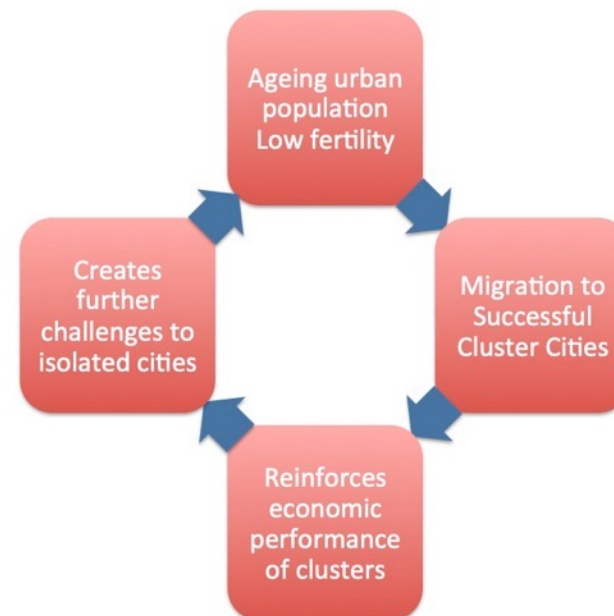
Increasing
life expectancy

Reducing
birth rates

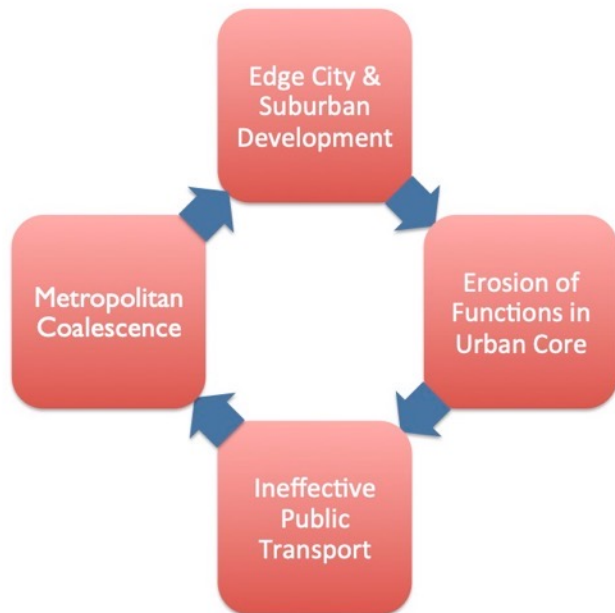
THE CYCLE OF URBAN CONCENTRATION : 'SUPER-CITIES'



THE DEMOGRAPHIC CYCLE



THE SPRAWLING CITY – a negative urban cycle



THE SHRINKING CITY – a negative urban cycle

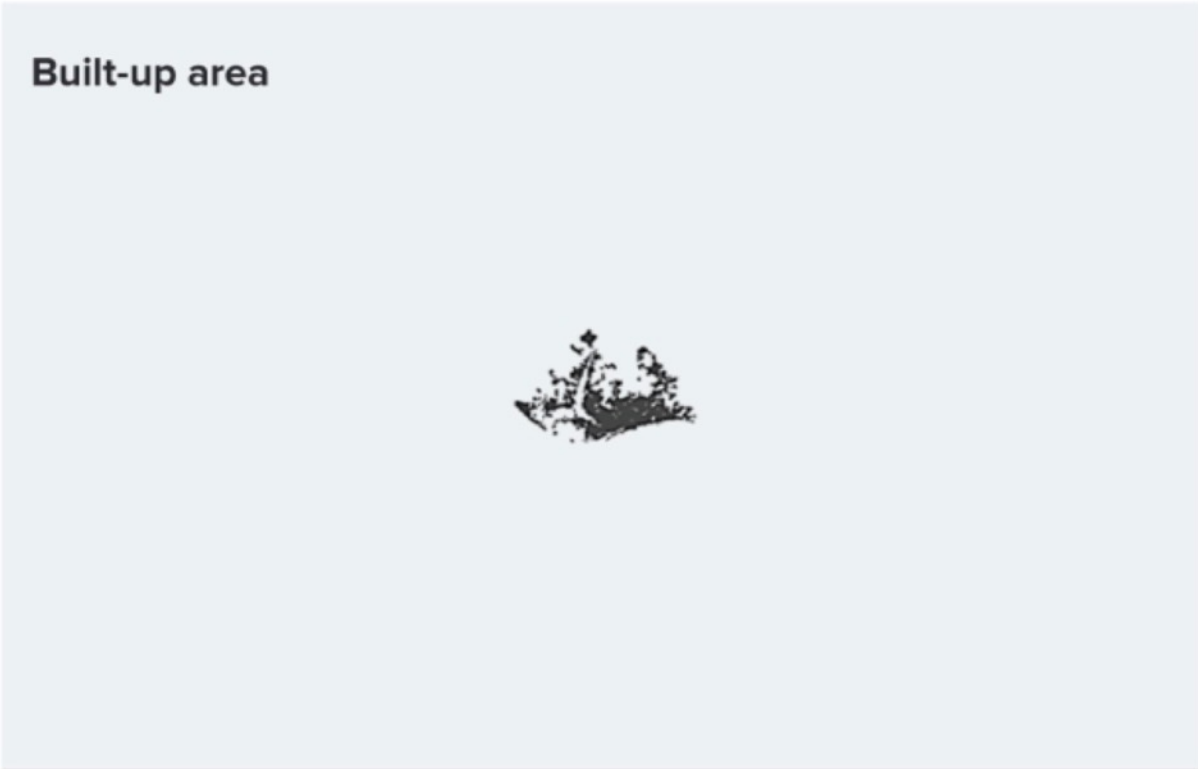


Atlanta and Barcelona have similar populations but very different carbon productivity

Atlanta



Barcelona



Population	Urban area	Transport carbon emissions
2.5 million	4,280 km ²	7.5 tonnes CO ₂ /person (public + private transport)

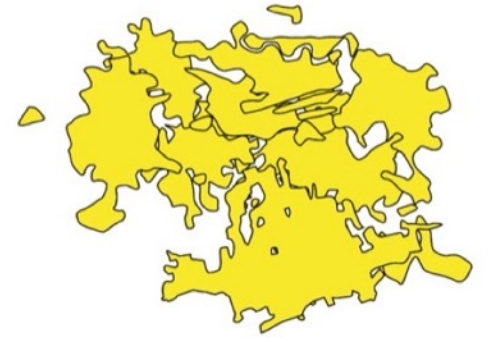
Population	Urban area	Transport carbon emissions
2.8 million	162 km ²	0.7 tonnes CO ₂ /person (public + private transport)

Built-up area

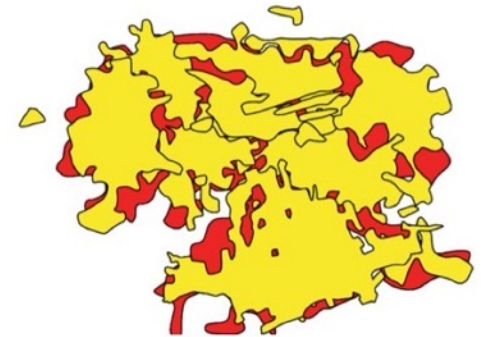


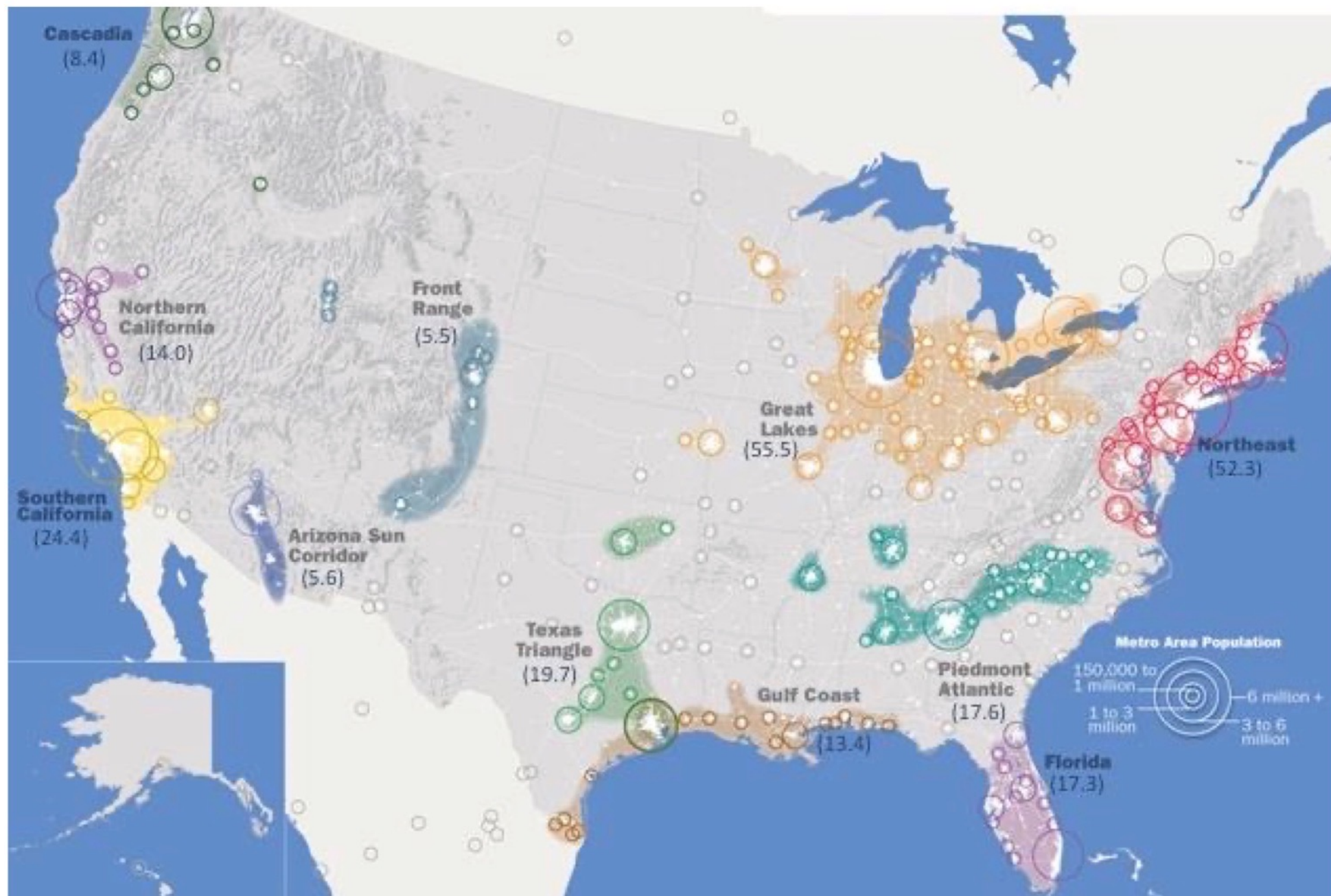
ATLANTA 2.5m

Karachi 23.5 m Chengdu 7.7 m
Jakarta 20 m Chongqing 7 m
Cairo 17.3 m Xi'an 6.5 m
Dhaka 14.4 m Jinan 4.3 m
Total 100.7 m



8 world cities with
a combined population
of 100 million fit into
the size of Atlanta

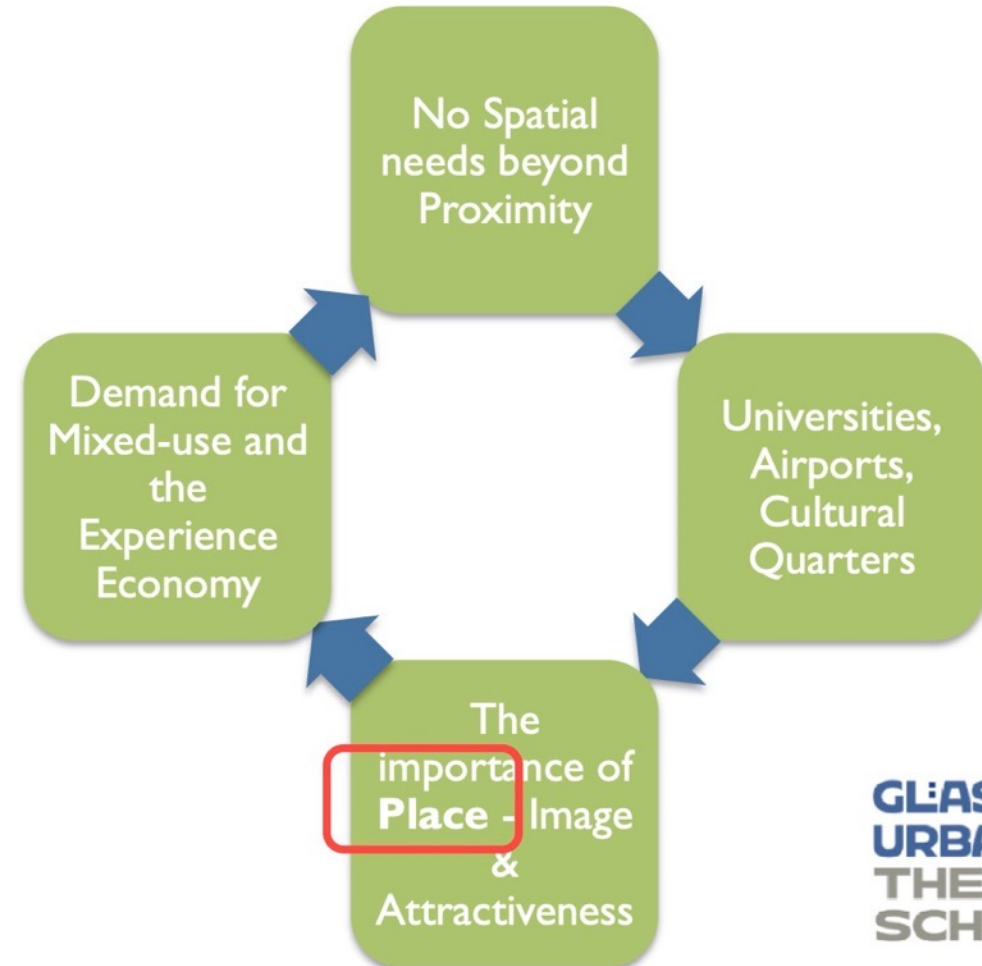
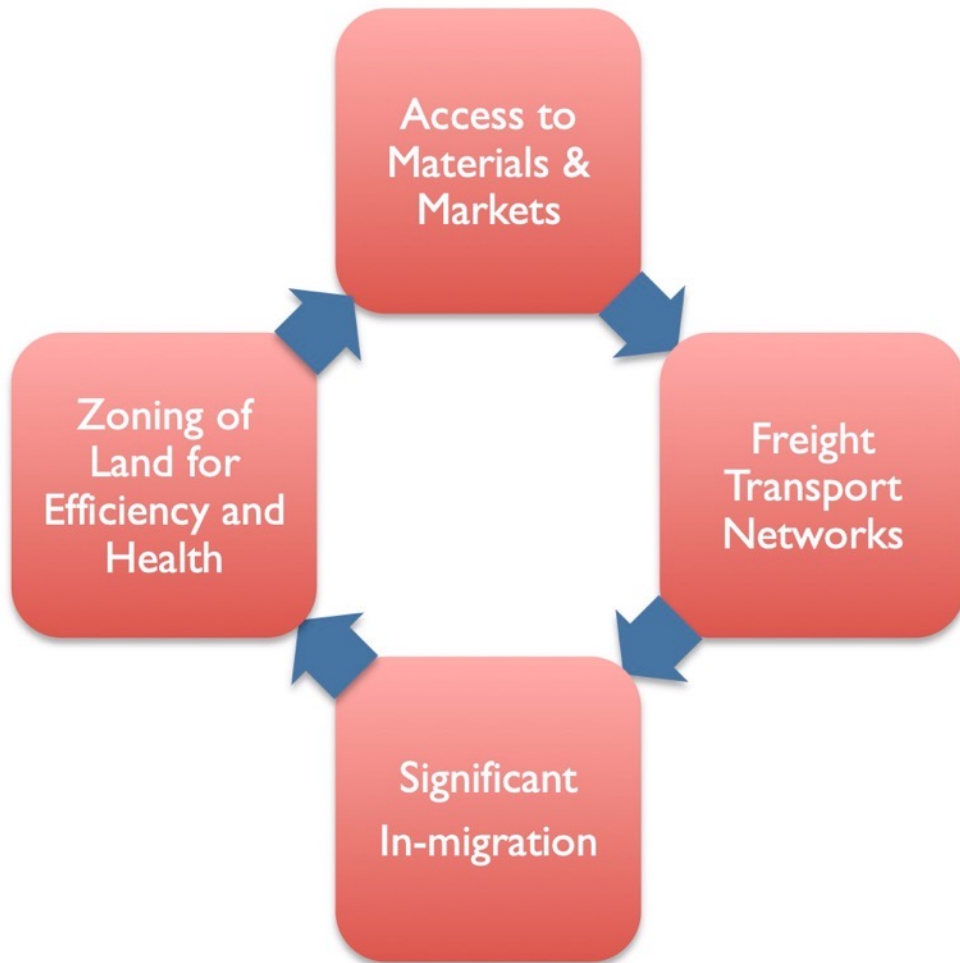




THE INDUSTRIAL CITY



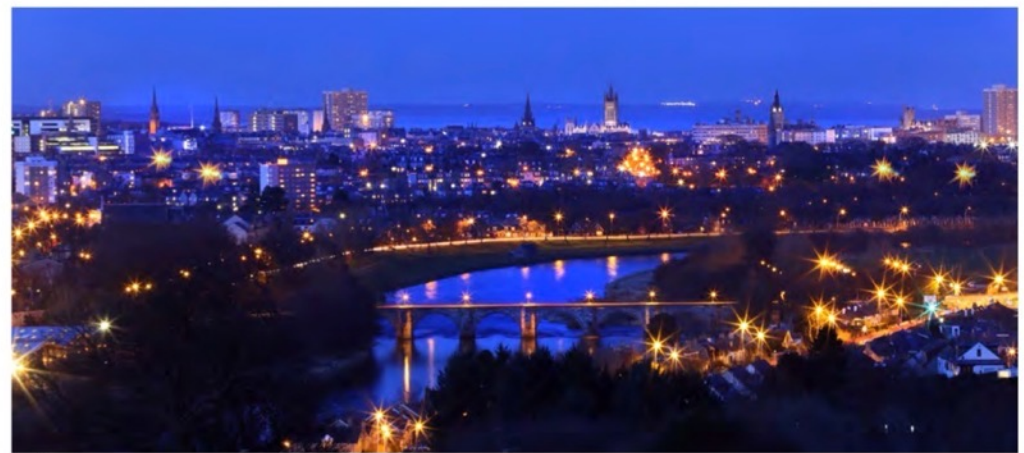
THE KNOWLEDGE CITY



SCOTLAND'S URBAN
A·G·E

Aberdeen, Glasgow & Edinburgh
in the Century of the City

BRIAN EVANS
JOHN LORD
MARK ROBERTSON



Aberdeen



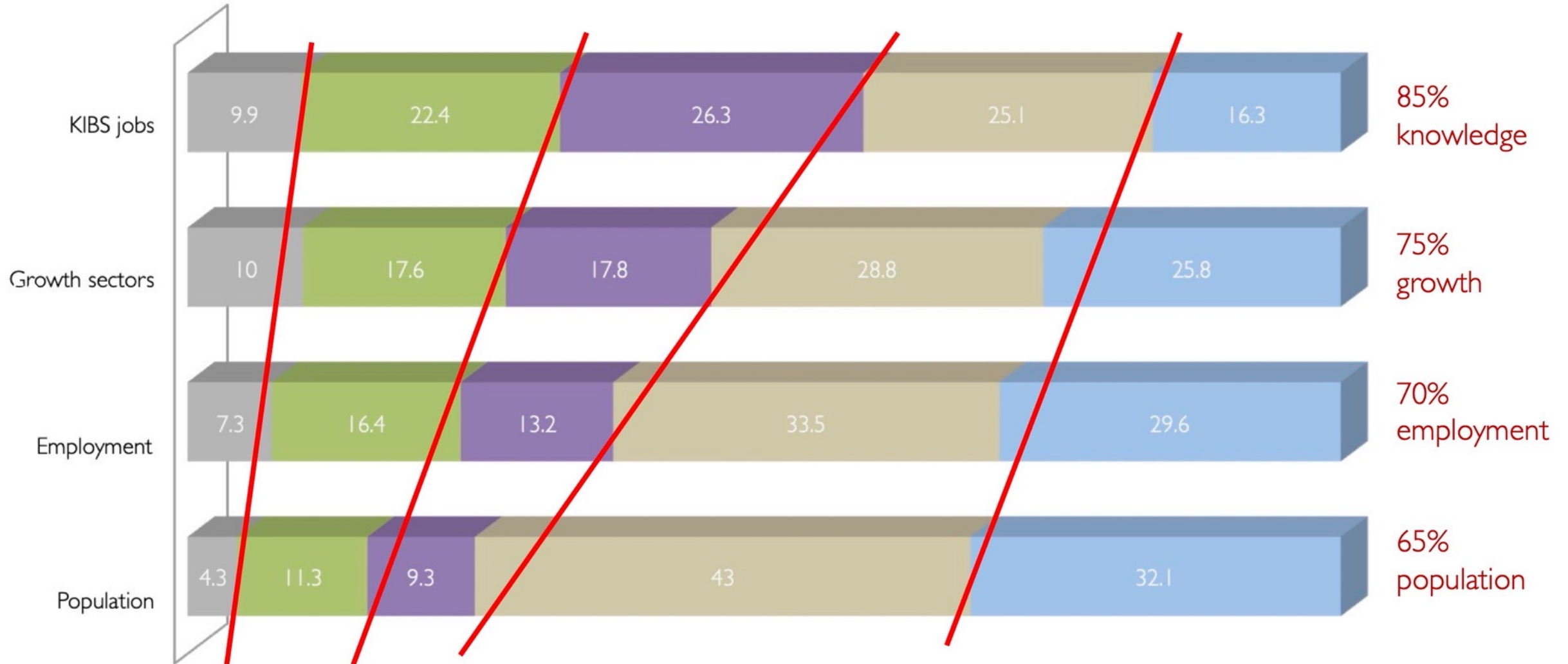
Glasgow

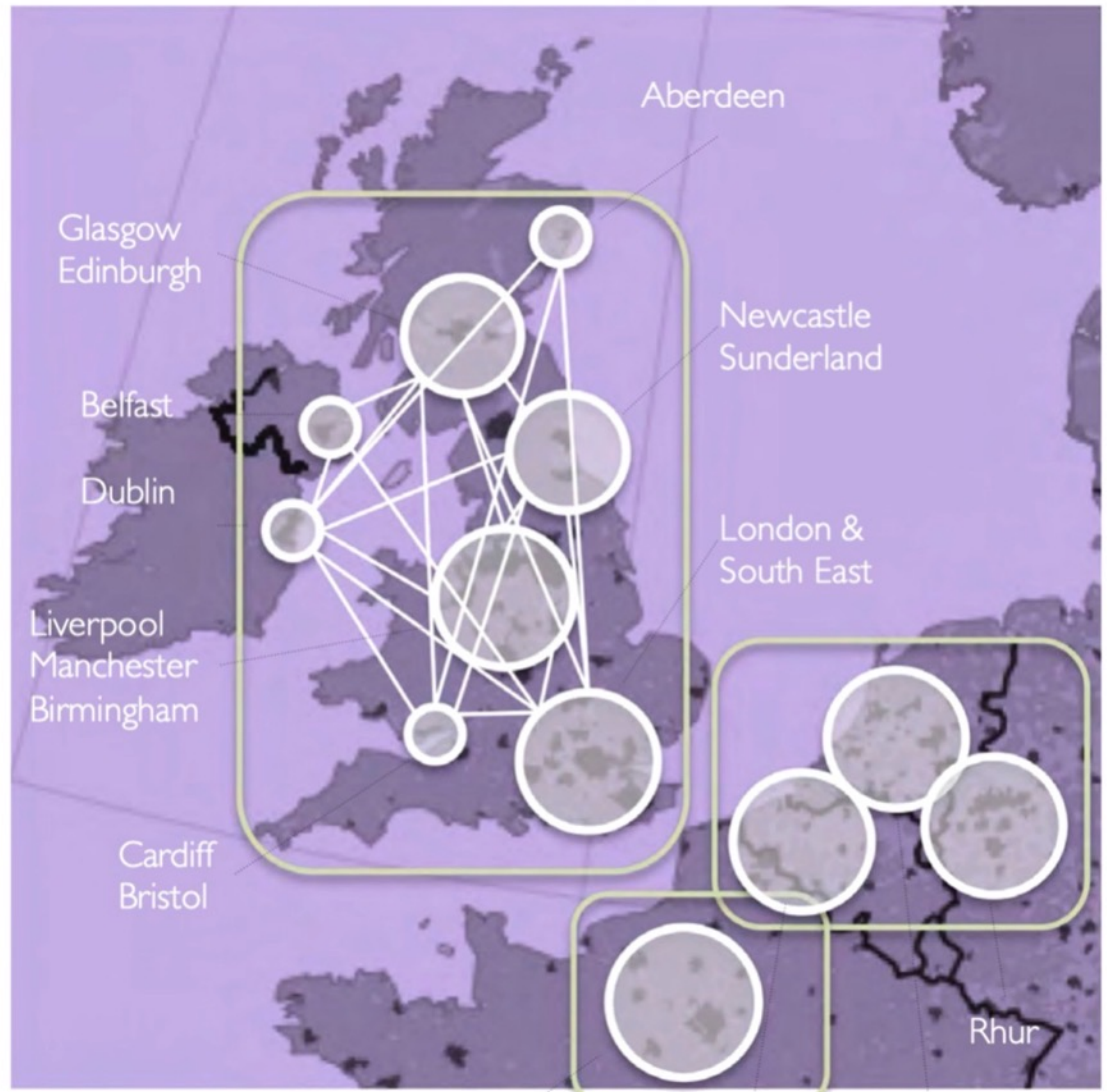


Edinburgh

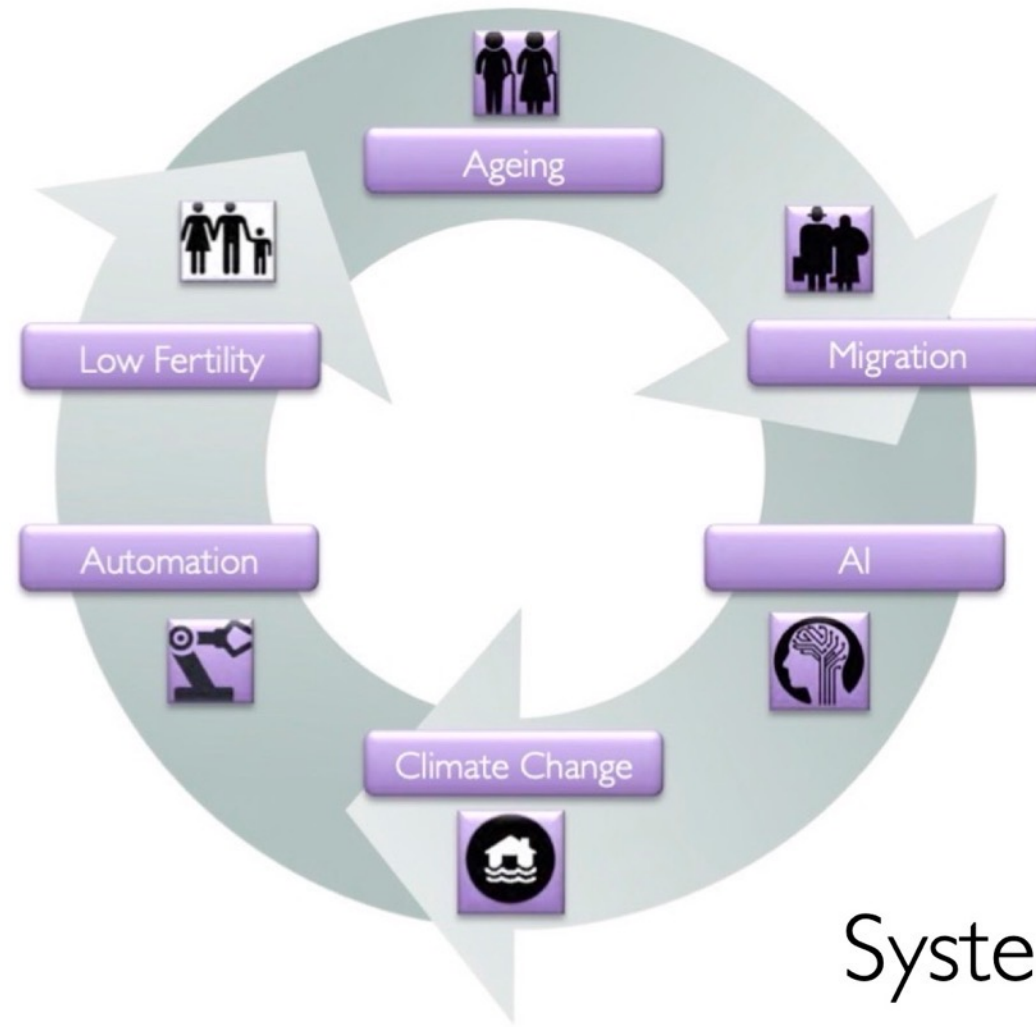
The power of the AGE cities

Aberdeen Glasgow Edinburgh City regions Rest of Scotland





Is the UK one **'Super-city'**?



Systems Design

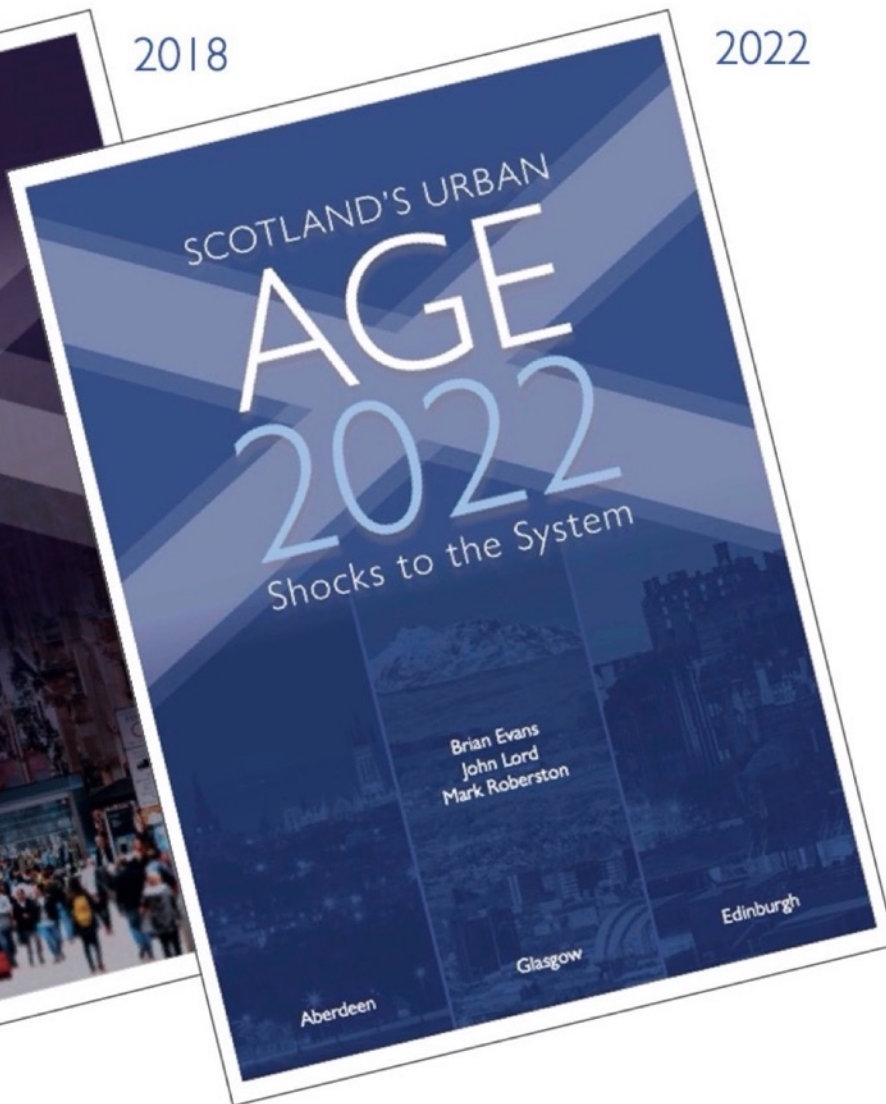
2018

Source: Glasgow Urban Lab

2018



2022

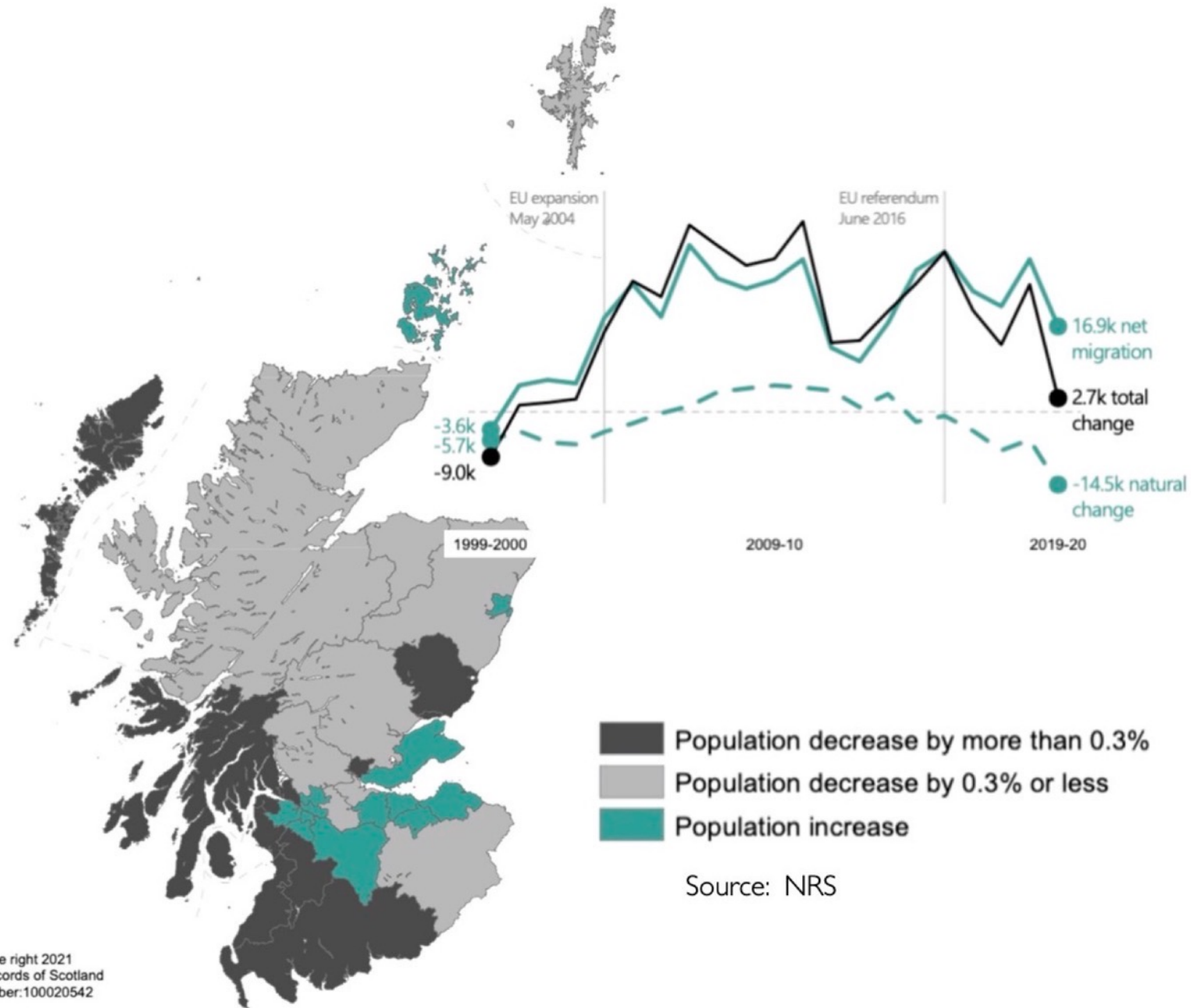


What has changed?
What has stayed the same?
What is new?
What is unknown?

COVID-19
Climate Emergency
Brexit & GFC – shadows

COUNTRY	Pop M 1971	Pop M 2020	% change
Scotland	5.3	5.5	5%
Denmark	4.9	5.8	17%
Finland	4.6	5.5	20%
Netherlands	13.2	17.4	32%
Norway	3.9	5.4	38%
Ireland	3.0	5.0	67%
NZ	2.9	5.1	78%

Source: World Bank, Irish government



Source: NRS

DEMOGRAPHIC CLIMATE & TECHNOLOGICAL CHANGE

A benign or toxic cycle?

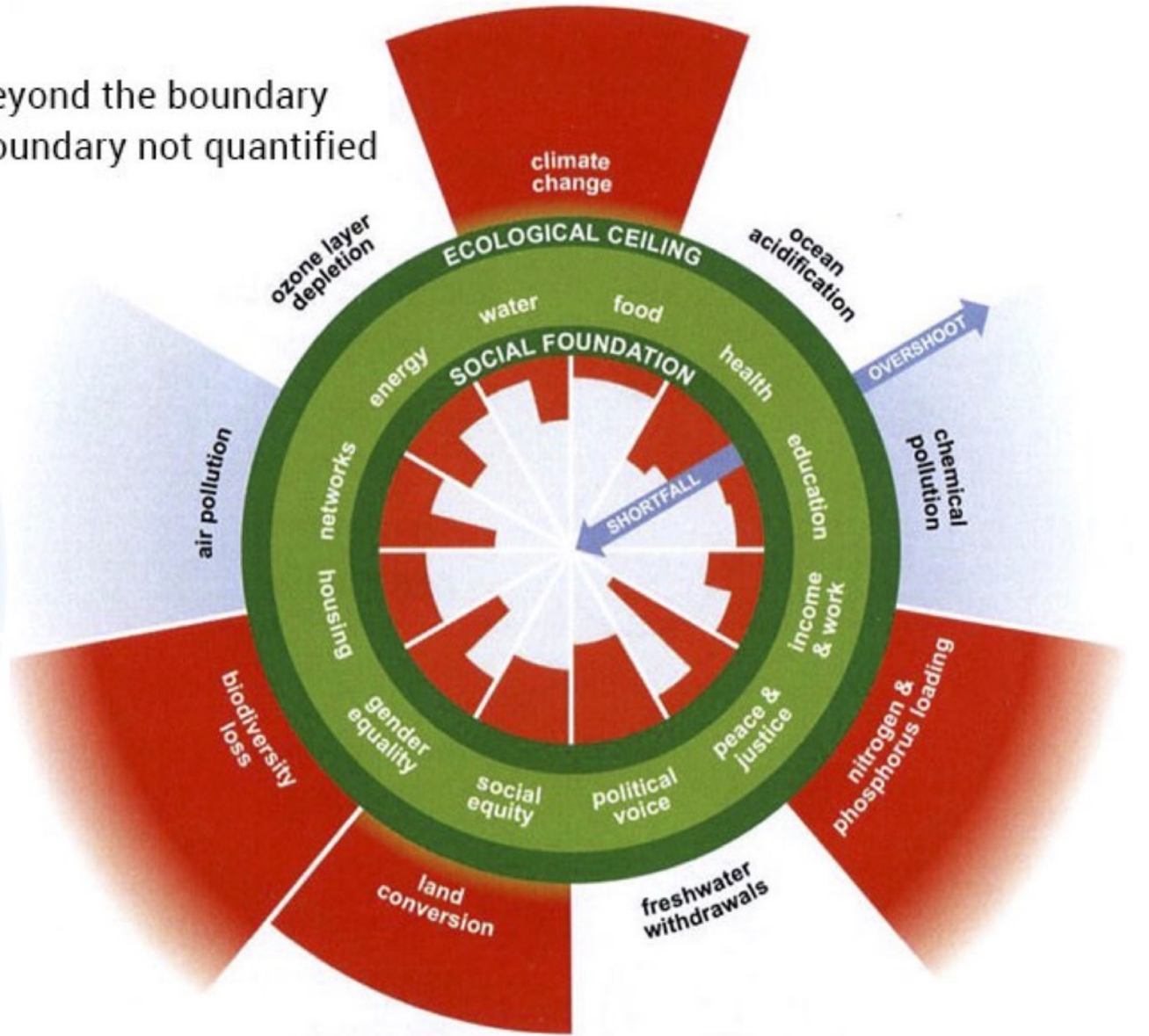
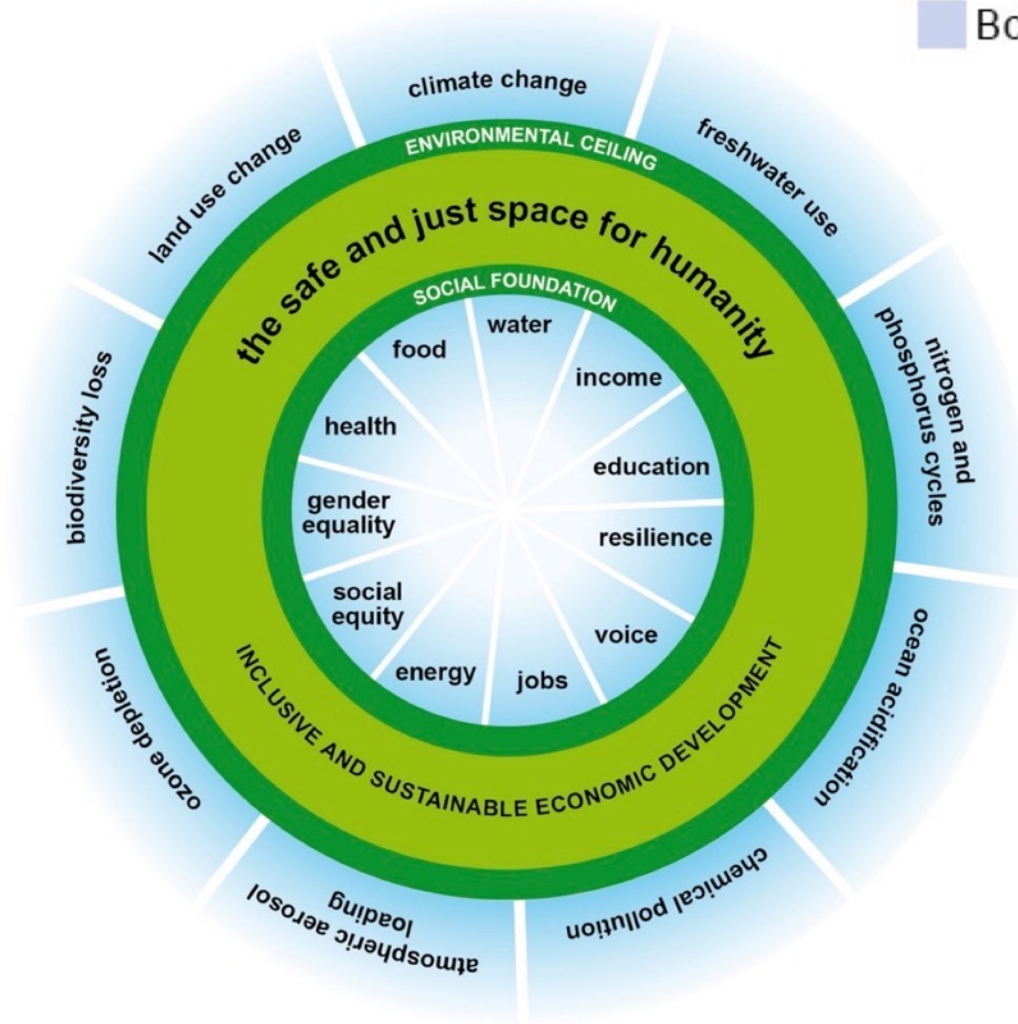
Systems Design?



Vision, leadership and pragmatic management are needed to respond to these global trends.

This is the 21st century challenge for government, business and education at national, regional and city level.

■ Beyond the boundary
■ Boundary not quantified



Kate Raworth: Doughnut Economics

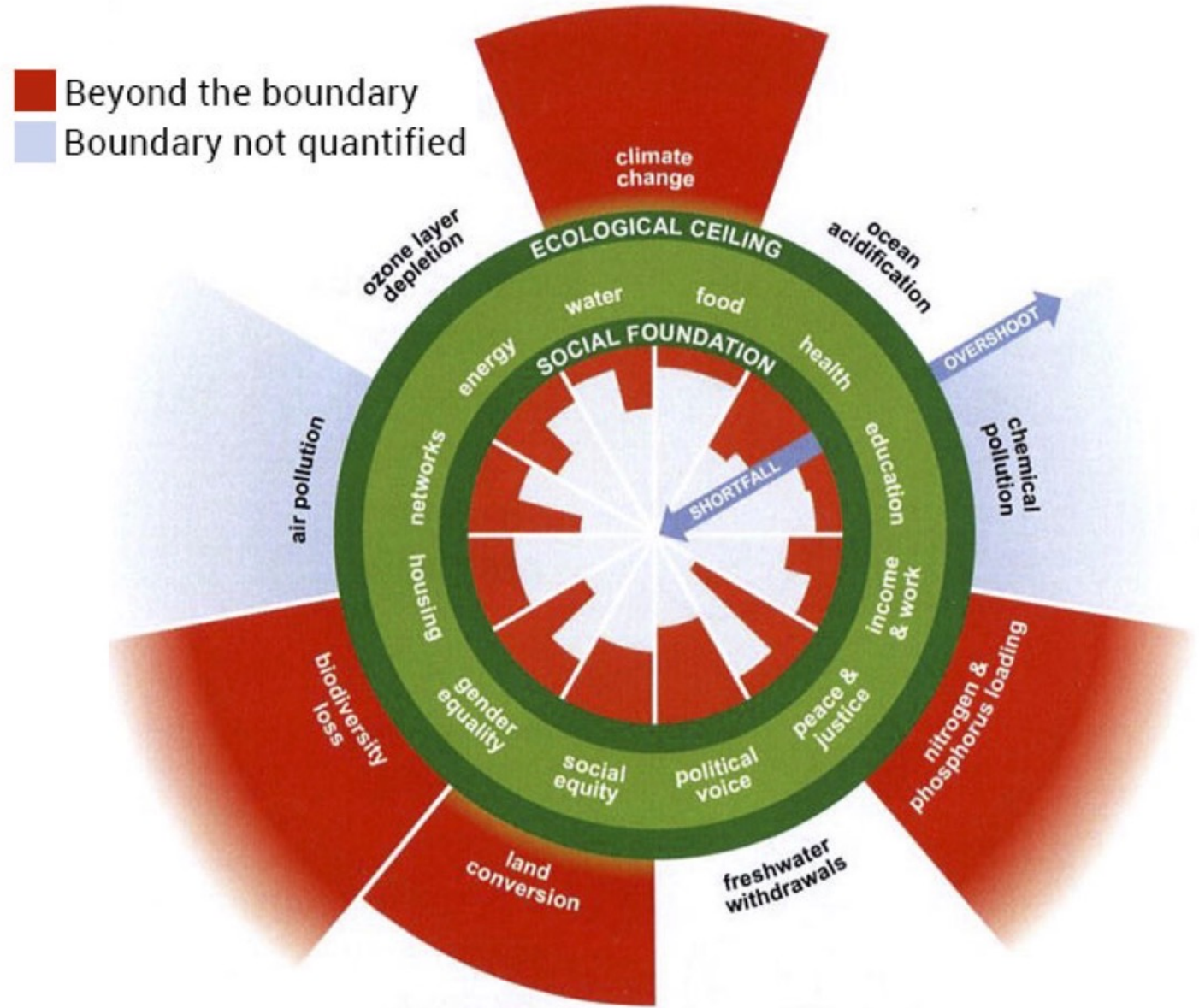
A Life on Our Planet

My Witness Statement and
a Vision for the Future

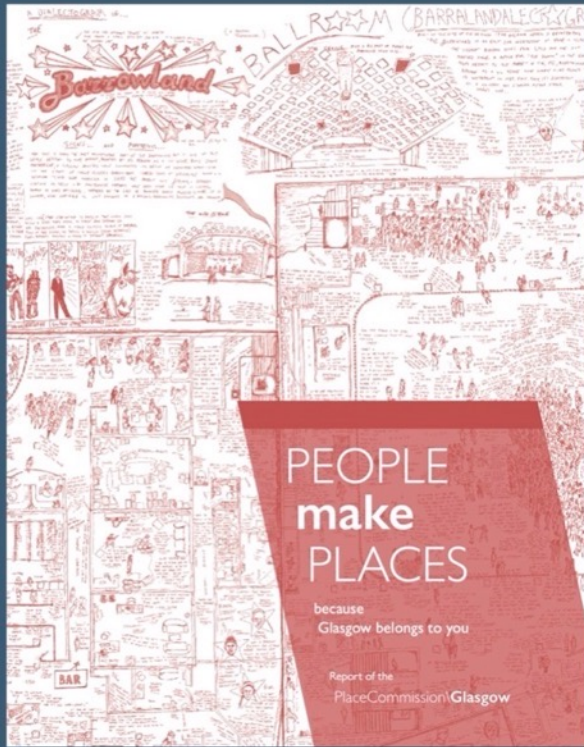
David Attenborough



The safe and just space for humanity
– inclusive and sustainable economic
development



“Bringing it all back home...”



PEOPLE make PLACES

Report of the
Place Commission \bGlasgow

2.

What we mean when we talk about place

“

Place is one of the most multi-layered and multi-purpose words in our language.”

ALESSANDRO DELL'ORTO

The Ubiquity of Place

Place is everywhere, places are all around us. Everywhere is some place. Place is a general construct, a concept that gives everywhere some qualities, some specificity whether cultural, social, environmental or economic. And these in turn connote other qualities – ceremonial, beautiful, tranquil, vibrant, community, busy, unloved places.

PLACE – What do we mean?

The virtuous loop of place quality and value



Outcomes: 'big ticket' policy arenas



Source: Carmona (2019)

Health outcomes

- Better physical health
- Better mental health
- Better general fitness
- Greater daily comfort
- Enhanced quality of life

Social outcomes

- Fewer accidents
- More social integration
- Lower rates of crime
- Better educational outcomes
- Street-level viability and sociability
- Civic pride
- Inclusiveness
- Enabling environments for older age
- Enabling places for people with disabilities

Economic outcomes

- Residential property uplift
- Retail property uplift and reduced vacancy
- More viable investments
- Increased local tax base
- Reduced public expenditure
- Lower costs of living
- Higher productivity

Environmental outcomes

- Reduced energy consumption
- Reduced carbon emissions
- Adaptive reuse of buildings and spaces
- Reduced pollution
- Greater resilience
- Ecological diversity

Source: Carmona (2019)

VALUE | QUALITY | ATTACHMENT

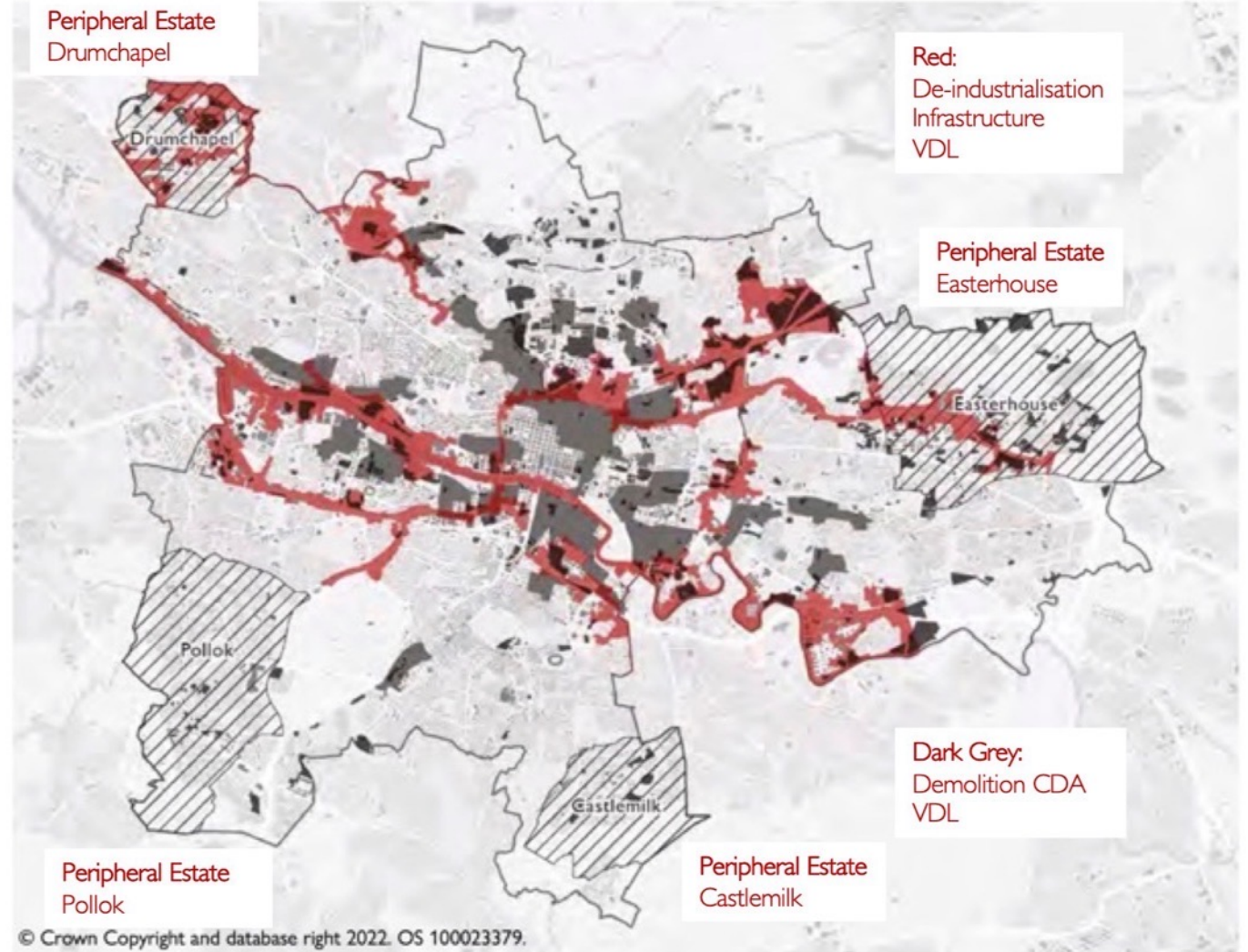
3.

The four eras of modern Glasgow

“

The city of Glasgow fascinates and intrigues – its rise, fall and reinvention, its history and modernity, its reputation as ‘Red Clydeside’ and its powerful architecture all give the city a myth and a legend.”

KEITH KINTREA & REBECCA MADGIN (2020)

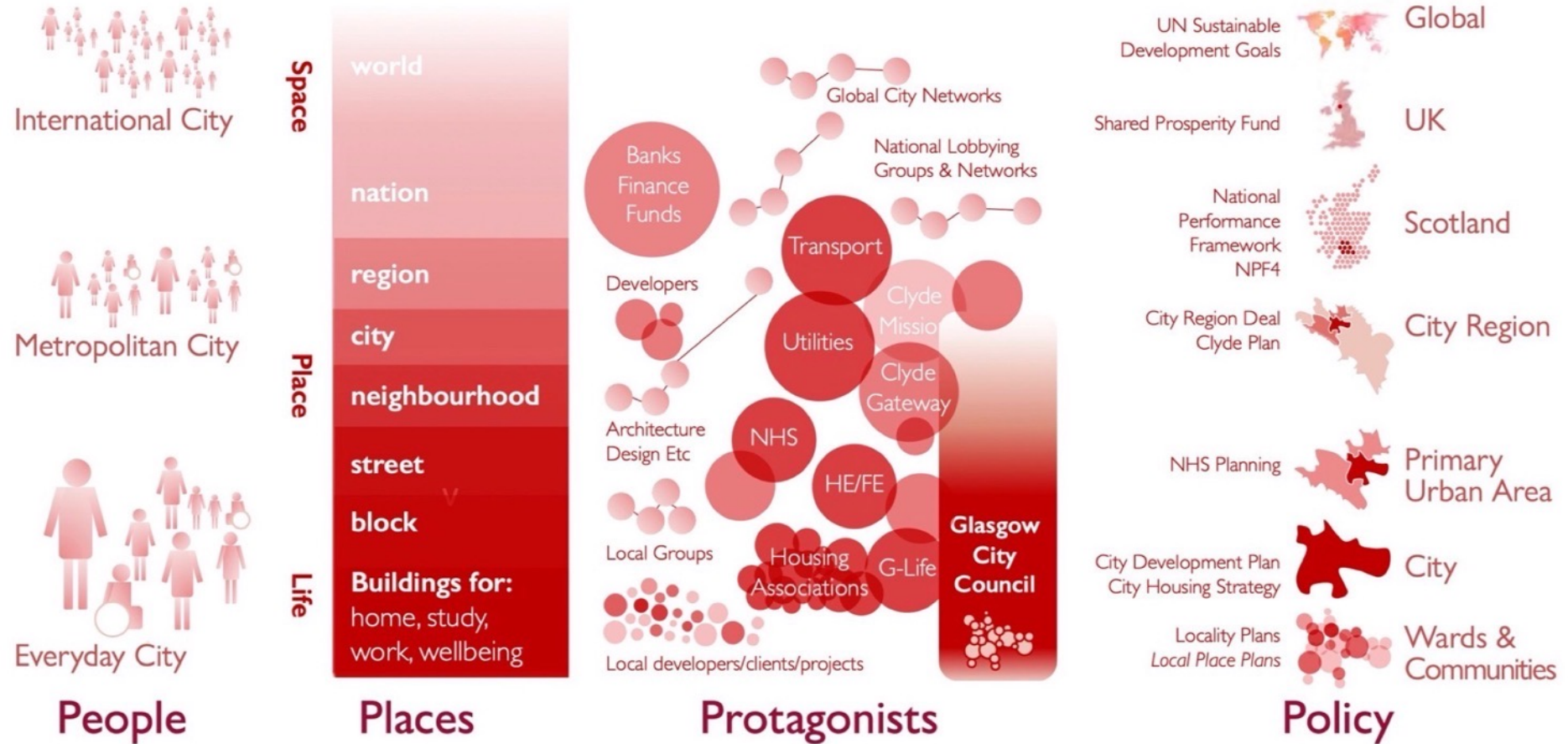


Source:
Glasgow City Council

The map shows the aggregate effect of motorway construction, demolition from comprehensive development areas and the vacant and derelict land from deindustrialisation.

4.

Investigations in place\ Enquiry & Reflection – a Place Ecosystem?



“Glasgow is at its most alluring, when it dreams of being a better version of itself.” **RORY OLCAYTO**

Place Commission\ **Glasgow**
City Urbanist\ **Glasgow**

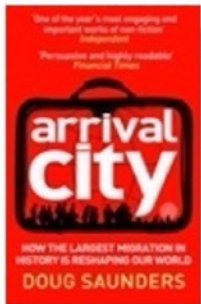
5. The Cities of Glasgow – looking through different lenses

Place Commission\Glasgow
City Urbanist\Glasgow

International

A reputation based on:

- ✓ Culture
- ✓ Sport
- ✓ Creativity
- ✓ Diversity
- ✓ Living



“Scotland without Glasgow ...would have no worldly dimension.”

“Its very important for cities all around the world to reinvent themselves., and Glasgow is a good example of that” **ZAHA HADID**

Metropolitan

The Bigness of Glasgow

Glasgow Primary Urban Area

Glasgow City Council
East Dunbartonshire Council
East Renfrewshire Council
Renfrewshire Council



Everyday

The Sum of Small Things

iGOW 2021

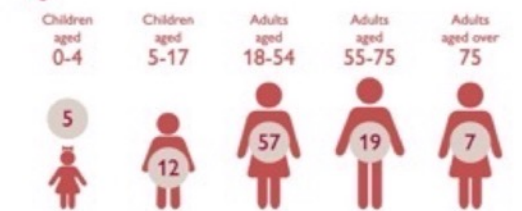
are over 630,000 living in Glasgow, entered in 100 people, population of the city like this.



Ethnicity



Age



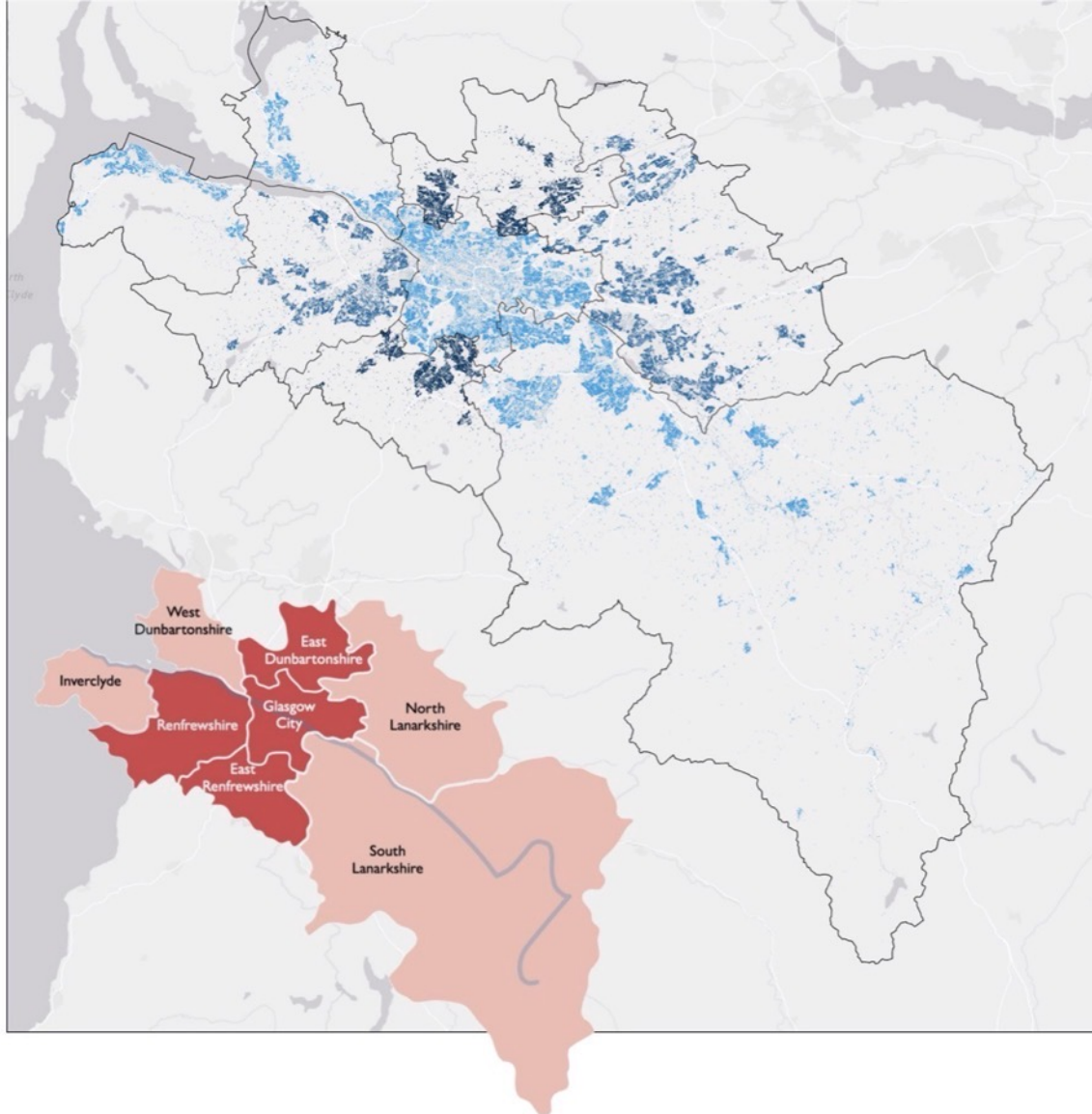
Disability



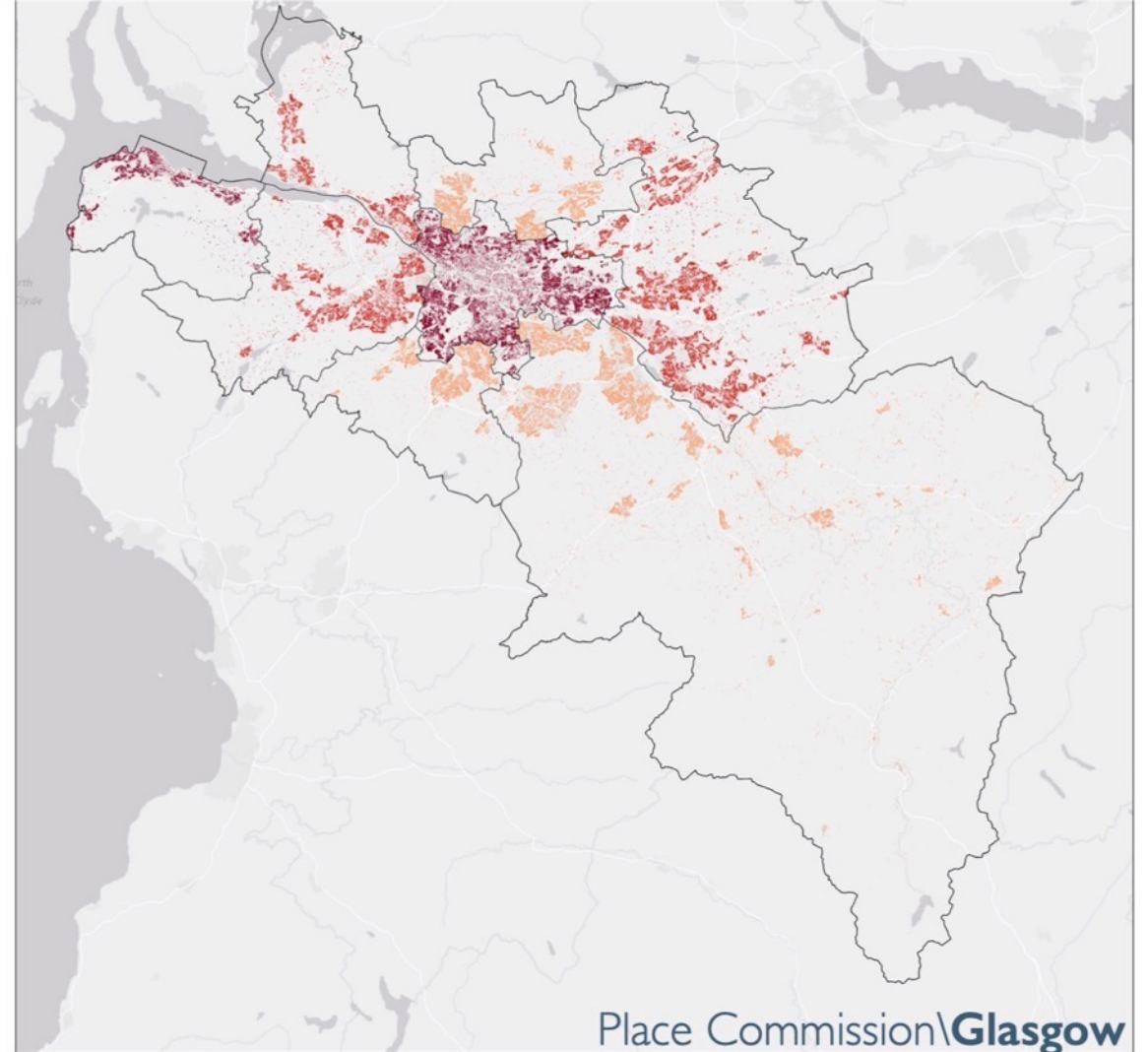
Data sources: National Records of Scotland, Glasgow City Council, Scottish Index of Multiple Deprivation, Understanding Glasgow

The Cities of Glasgow – Issues of Metropolitanity

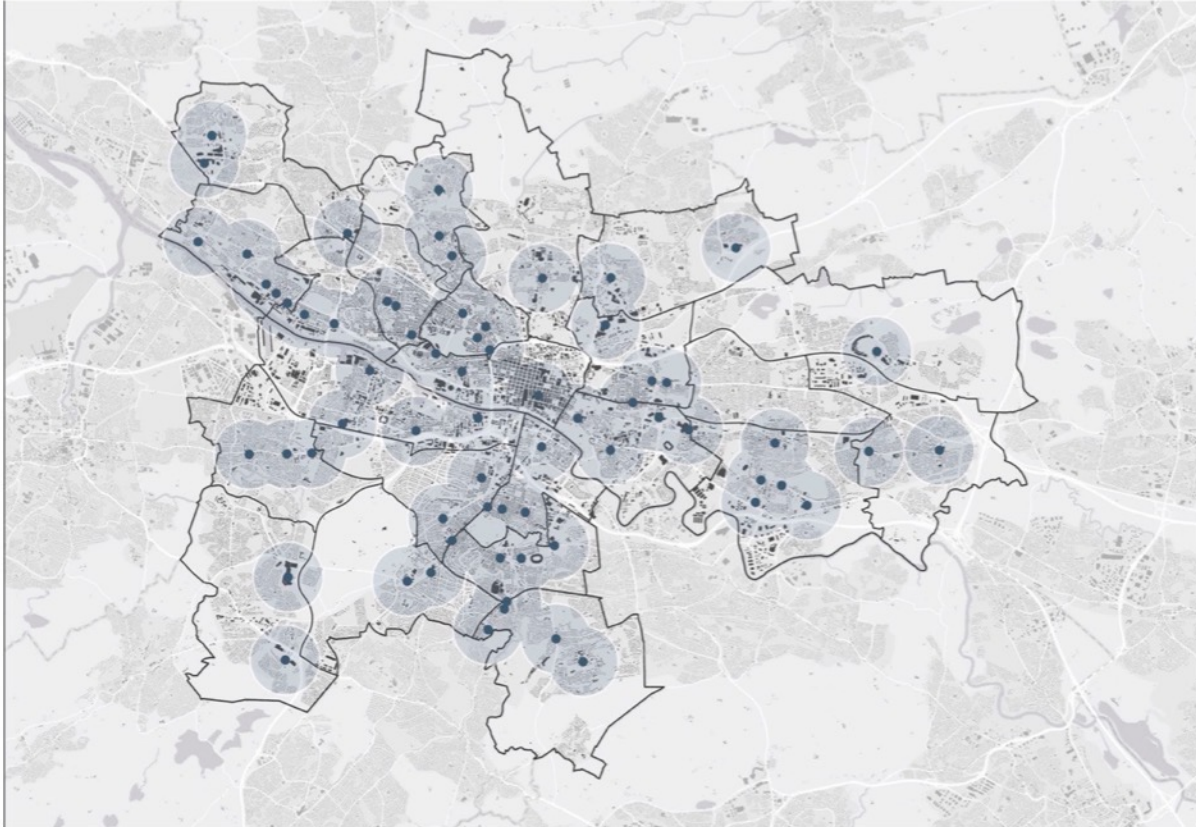
Glasgow City Region: Geography of Carbon Retrofit: Light = lower



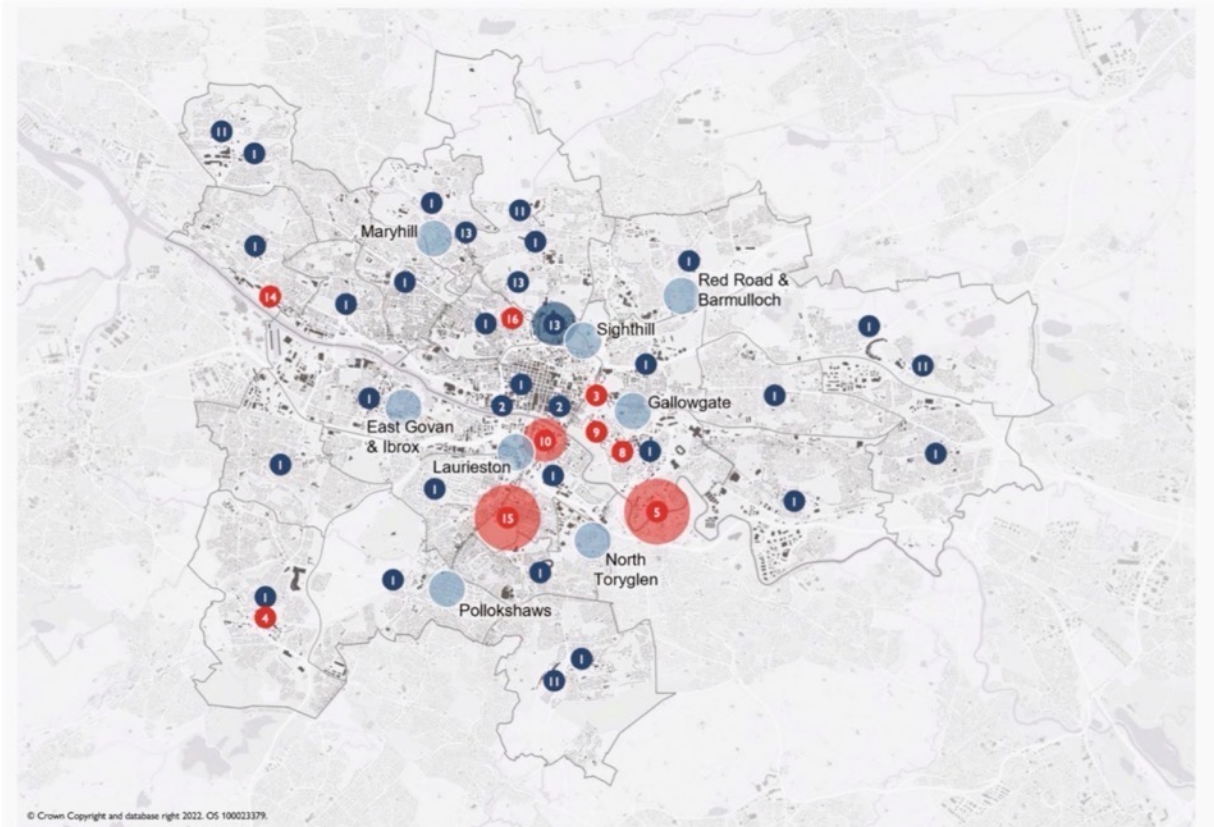
Glasgow City Region: Geography of Disadvantage: Light = lower



5. The Places of Glasgow\ of people, for people, by people



Glasgow City: Geography of Neighbourhoods



Glasgow City: Typology of Place

The PLACES of Glasgow



1 \AiR\

Artists in Residence is a city-wide project to bring engagement with the arts close to communities across each of the 23 wards in Glasgow.

Place Credentials: Community Engagement, Community Empowerment, Public Enterprise, Inspirational Intent, Education



2 \After the Pandemic\

After the Pandemic uses creativity and community to rethink our environments, reimagine our cities, and redesign our communities to be greener, more vibrant, and more resilient.

Place Credentials: Community Engagement, Community Activation, Climate Action, Partnership, Inspirational Intent



3 \Bell Street Stables\

Bell Street Stables is a positive example of how a historic industrial building can be restored for modern use.

Place Credentials: Excellent Design, Public Enterprise, Climate Action, Procurement



4 \CCI\

The Centre for Civic Innovation (CCI) is a citizen-centred design team within Glasgow City Council responsible for establishing a design-led approach to the understanding of societal shifts and civic experience within the city.

Place Credentials: Community Engagement, Community Empowerment, Public Enterprise, Excellent Design, co-creation, Education



5 \Clyde Gateway\

Clyde Gateway is an urban regeneration Company established to deliver significant social, economic, and physical change across East Glasgow and South Lanarkshire.

Place Credentials: Community Engagement, Excellent Design, Public Enterprise, Governance, Partnership, Procurement, Delivery, Longevity



6 \Clyde in the Classroom\

Clyde in the Classroom is a hands-on project which uses the life history of a native Scottish species, the brown trout, to promote awareness of river ecology among young people across the River Clyde catchment.

Place Credentials: Community Activation, Climate Action, Education, Delivery



7 \Clyde Climate Forest\

The Clyde Climate Forest is a project that aims to plant 18 million trees across Glasgow City Region and has the potential to benefit quality of life, quality of place, and wildlife habitats.

Place Credentials: Community Activation, Climate Action, Education, Delivery



8 \Glasgow Women's Library\

The Glasgow Women's Library is a leading charity and social enterprise that supports thousands of women across Scotland every year by coordinating and hosting a range of public events, services, cultural programmes, and learning opportunities.

Place Credentials: Community Empowerment, Public Support, Explicit Values, Inspirational Intent, Education

The PLACES of Glasgow



9 \Monteith Row\

Monteith Row is a housing project in the inner eastend of Glasgow that has restored a neglected city block and revitalised the listed Monteith Hotel.

Place Credentials: Excellent Design, Public Enterprise, Climate Action, Procurement



10 \New Gorbals\

New Gorbals is regarded as an exemplar of masterplan-led area regeneration. New Gorbals Housing Association, established by residents in 1989, has played a pivotal role in the transformative change.

Place Credentials: Community Empowerment, Community Activation, Governance, Partnership, Procurement, Longevity



11 \On the Edge\

On the Edge is a visual arts project by Bash Khan that raises awareness of the people and places in Glasgow left on the edge by the political, planning and development process. It asks 'how can communities reclaim and give themselves 'permission' to use their public spaces?'

Place Credentials: Community Empowerment, Community Activation, Inspirational Intent



12 \Refuweegee\

Refuweegee is a community-led charity which helps to ensure that forcibly displaced people arriving in Glasgow are greeted by kindness and generosity.

Place Credentials: Community Empowerment, Community Activation, Inspirational Intent, Values



13 \Scottish Canals\

Scottish Canals is a public body that has proactively improved the environmental and socio-economic conditions on and around the banks of the Forth & Clyde Canal by combining functional requirement with quality of place.

Place Credentials: Community Activation, Excellent Design, Public Enterprise, Climate Action, Partnership, Procurement, Delivery



14 \Scotstoun Community Garden\

Scotstoun Community Garden is a community-driven project that has seen a former industrial site be transformed into a tranquil and beautiful green space by volunteers who sourced their own funds, tools, and materials.

Place Credentials: Community Activation, Excellent Design, Climate Action



15 \South Seeds\

South Seeds is a community-led organisation based in Govanhill with the mission to enable Southsiders to lead more sustainable lives.

Place Credentials: Community Empowerment, Community Activation, Social Enterprise, Climate Action, Values, Education



16 \Woodside Towers\

The regeneration of the Woodside Multi-Storey Flats in North Glasgow is an exemplar for retrofitting high-rise housing and has helped to reduce energy demand and tackle fuel poverty for residents.

Place Credentials: Excellent Design, Climate Action, Community Engagement, Procurement

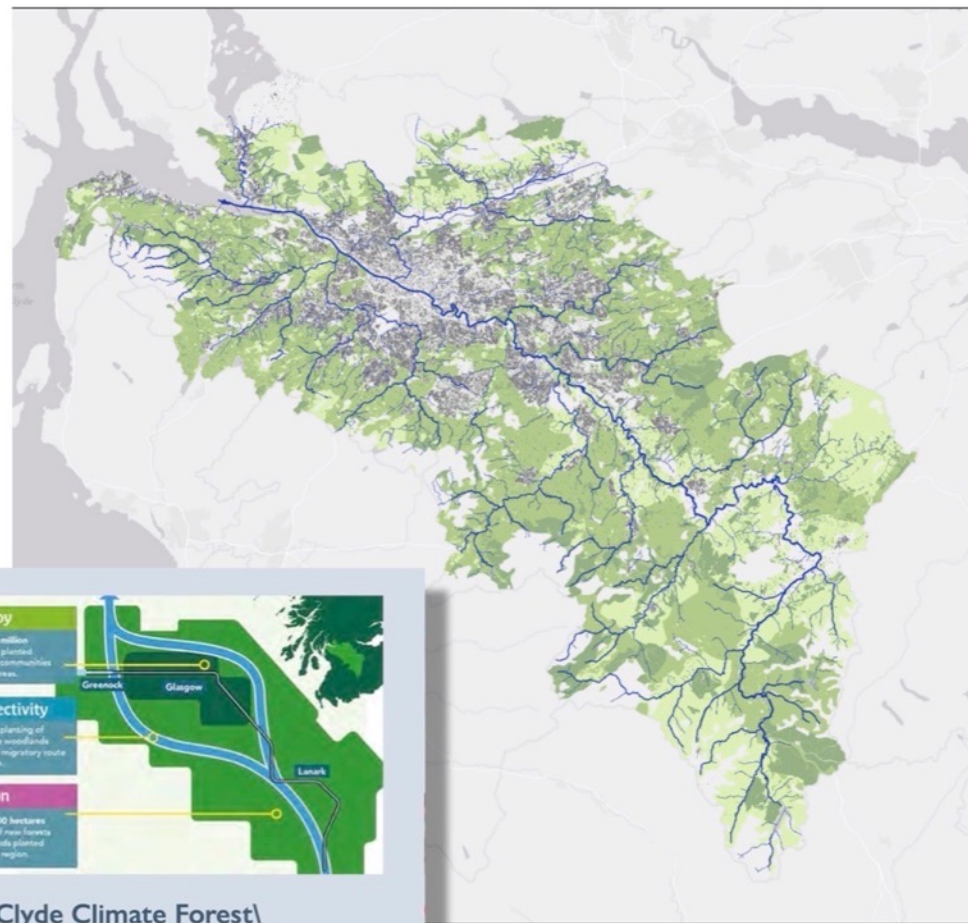
The Places of Glasgow \ place synergies \



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Place Credentials: Community Activation, Climate Action, Education, Delivery

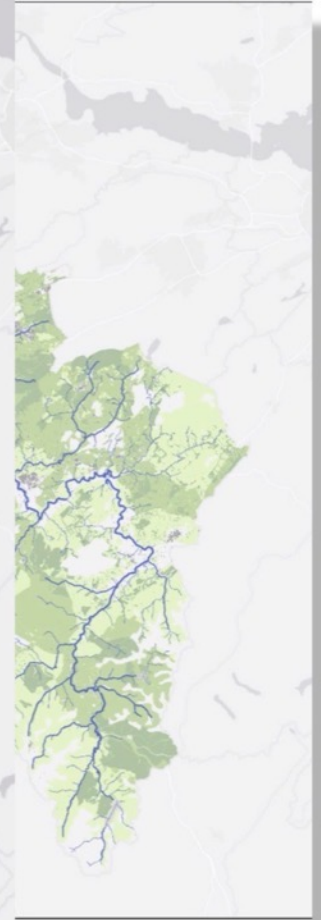
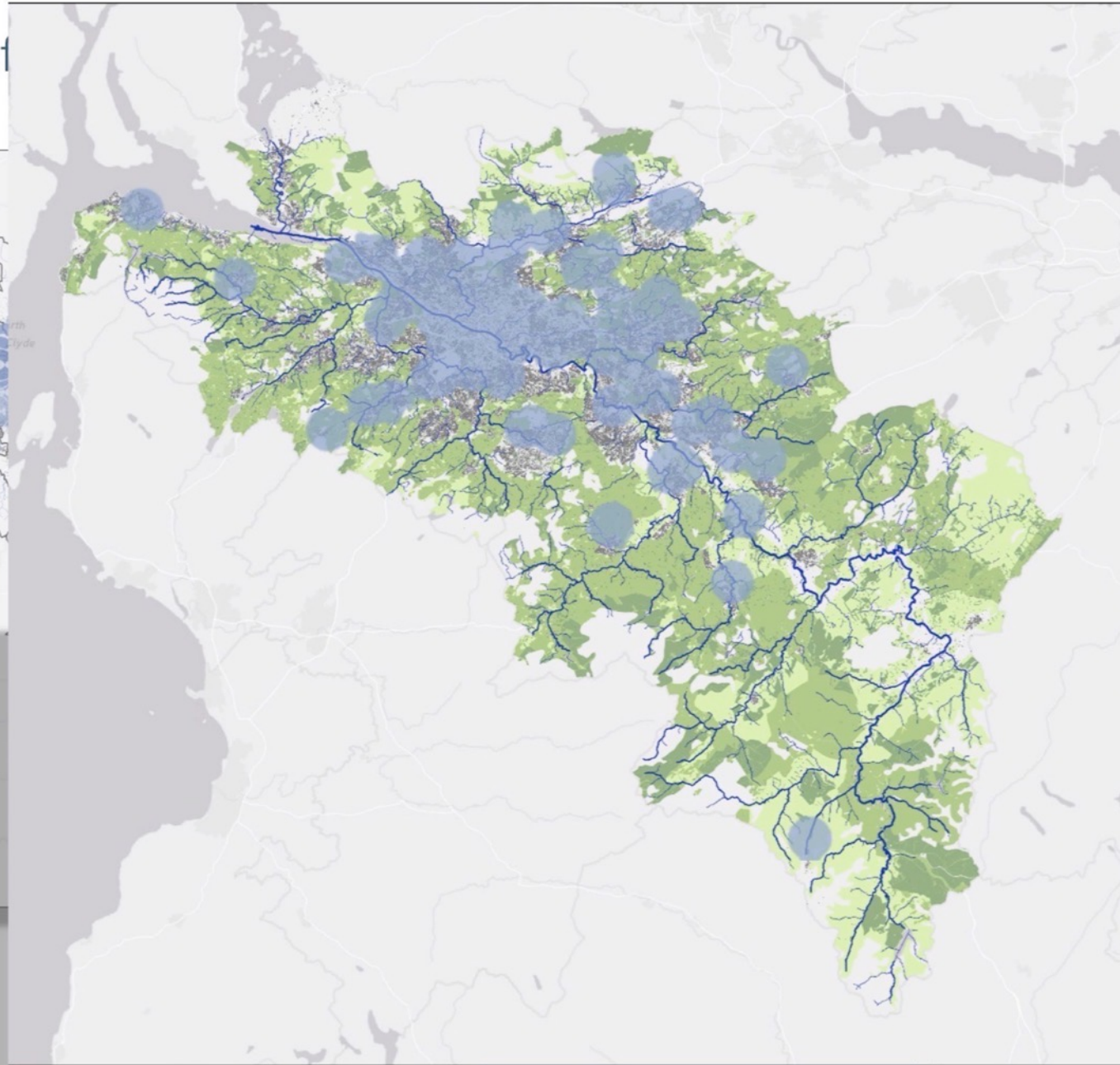
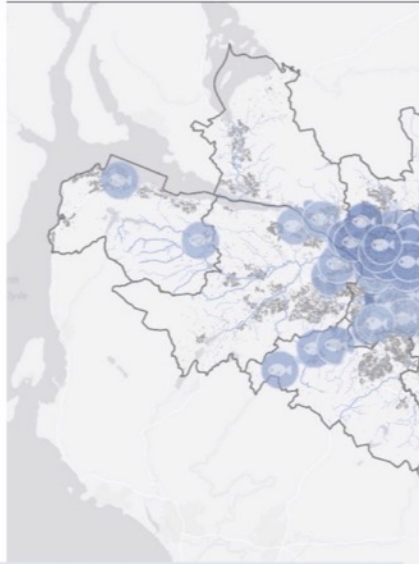


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The Places of



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The Places of Glasgow\ place synergies\



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6. Recommendations

[1] Place Outcomes

shift emphasis from
plans & targets to
outcomes

[2] Climate Outcomes

[3] Place Stock Transfer

transfer assets to
communities

[4] Place Governance

Accountability &
Responsibility
HAs\CDTs

Partnership
Leadership
Championship

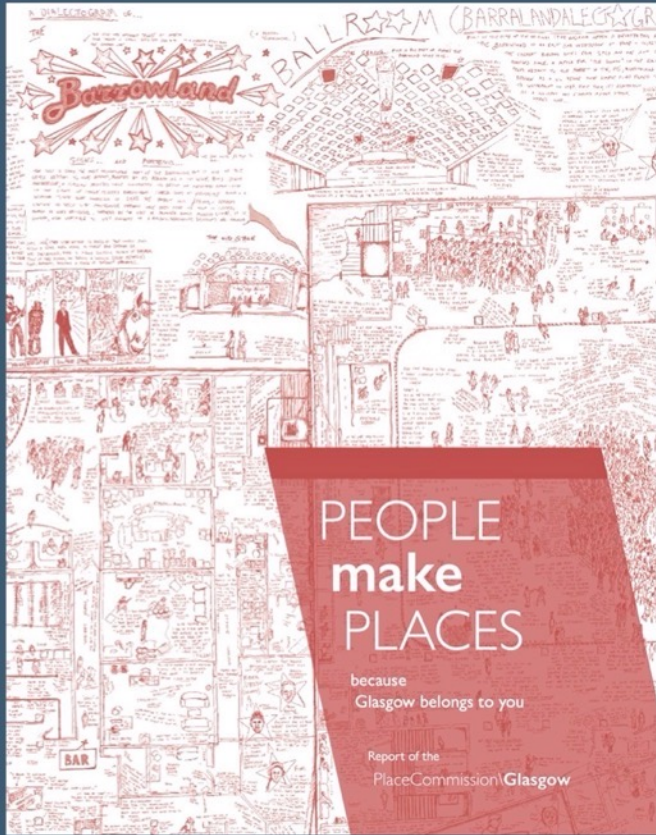
[5] Glasgow Place Bureau

public bodies enable
creative community
activates

[6] Place Panels

Tell the world
Bring the world
1988/1990 + 40

[7] Place Exhibition



“

You won't often find us talking about climate change ...

... we think the best way to tackle climate change is by cutting energy use, reducing waste and using local spaces to grow food – bringing practical benefits to local people.

So, we talk about these things most of the time.”

Lucy Gillie, South Seeds

Place Commission \Glasgow
City Urbanist \Glasgow

URBANiSM

- A collective system of values
- *A certain level of economic & political development*
- The sophisticated pursuit of pleasure (happiness)
- *A high level of intellectual & artistic excellence*

Robert Armstrong:
In Search of Civilization

the pursuit of
URBANiTY

URBANiTY

4 principles for dealing with **4** technological revolutions:
agricultural, industrial, transportation, digital;

Urbanism is positive (intentional) and addresses ...

Entropy (lack of positive energy) causing a gradual decline into disorder

(**natural processes** – drought, flood and disease – or **manmade processes** – war, greed and the careless, senseless exploitation of resources and people)



The issue of good urbanism is not only an abstract ideal.....

...it is about creating the right conditions to make places work for people

Kelvin Campbell



Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody.

— Jane Jacobs —

Everyday\City

CityUrbanist\Glasgow

The Higgs paradox.

“If we are to build the city of the future,
we must first imagine it ...

*... but what happens to our collective
consciousness and mental health if the only
futures we can imagine are apocalyptic and
dystopian”.*

We need hope...



URBAN FLORAS: a contribution to biodiversity



Taylor & Francis
Taylor & Francis Group

So ... is Green Consciousness a pre-condition for Urbanity?

Prof Brian M Evans

**GLASGOW
URBAN LAB
THE GLASGOW
SCHOOL OF ART**

Geneva UN Charter
Centre of Excellence

SMART SUSTAINABLE CITIES



UNECE

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Living in Glasgow: A journey to 2030

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