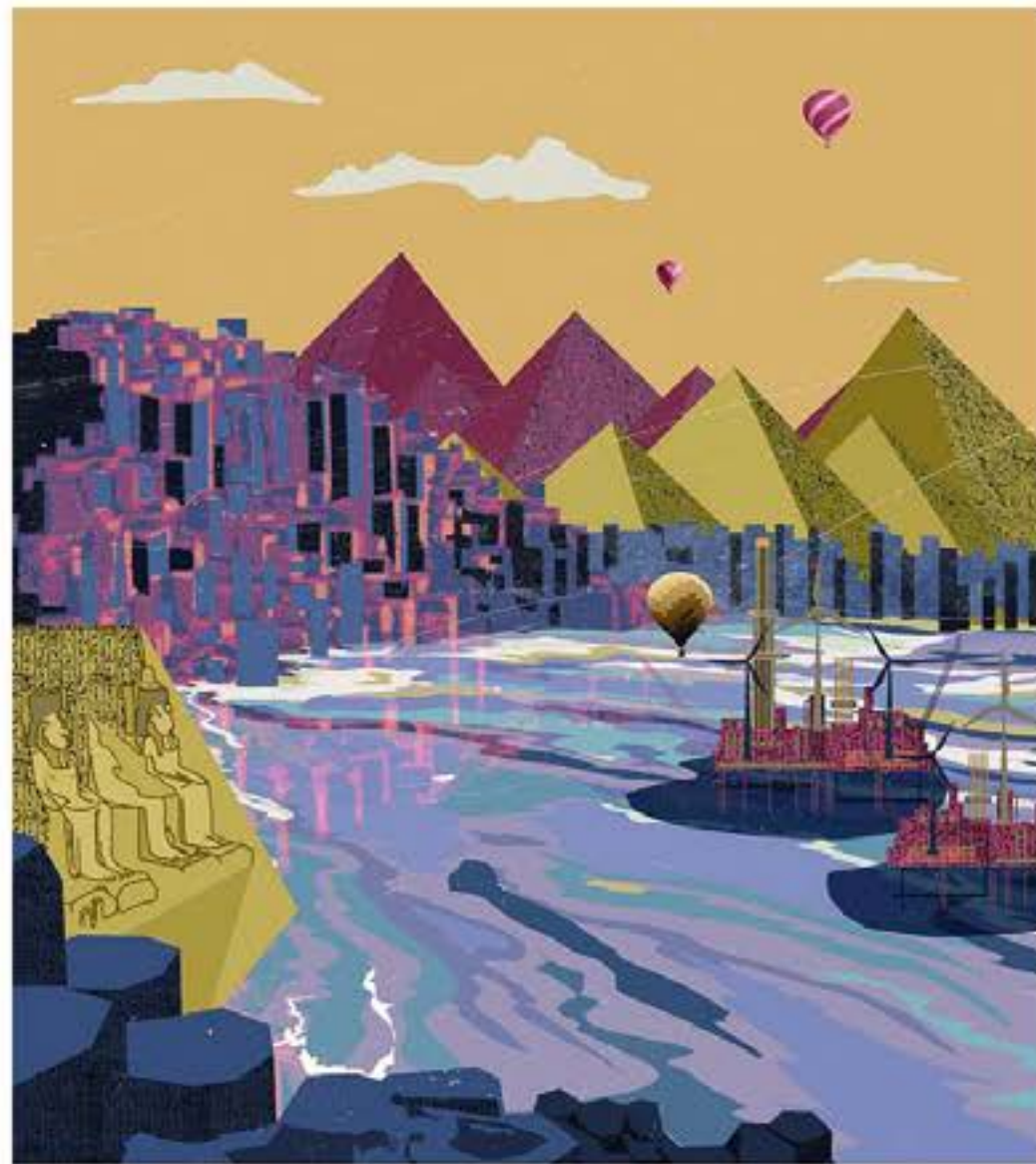


Intersecting Zero-Carbon Goals with Architectural Heritage Practices

Experiences from a Transnational Design Studio

Dr. Laura Coucill, Dr. Sherif Goubran, Prof. Tom Jefferies, Prof. Gary Boyd



DISPLACEMENT
AUTHENTICITY, WATER, WASTE

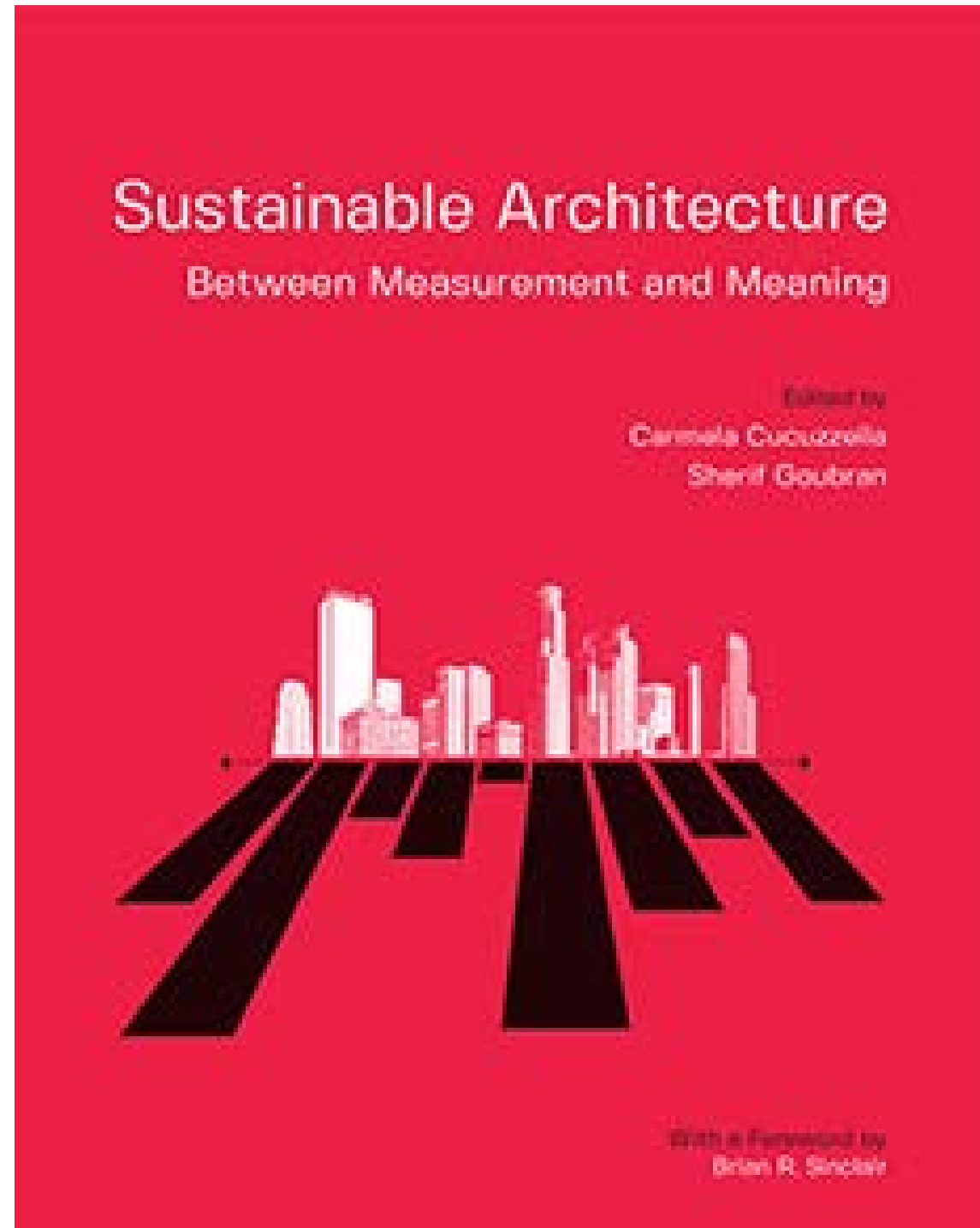


REVIVING-REUSING-FUTURING
THE COPPER CONDUIT



SCARCITY, SURPLUS & HERITAGE
URBAN BIO-LOOP

Project Origins



Going Global Partnership

Urbanisation

By 2050 68% of the world's population will be urban. What defines the limits of urban space and what are the operational and performance characteristics of urban form?

Technology

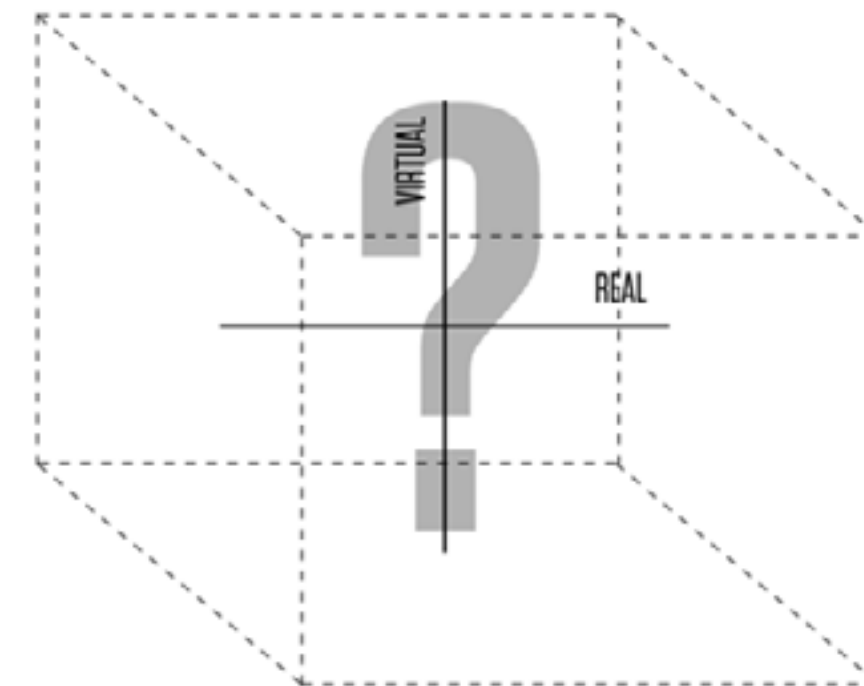
How might digital technologies alter spatial occupation and use patterns? What is the future the high street, food production and tourism in a digitally infused context?

Sustainability

What could carbon negative cities look like and how can spatial intervention respond to UN Sustainable Development Goals and the Climate Emergency in culturally appropriate ways?

Resilience

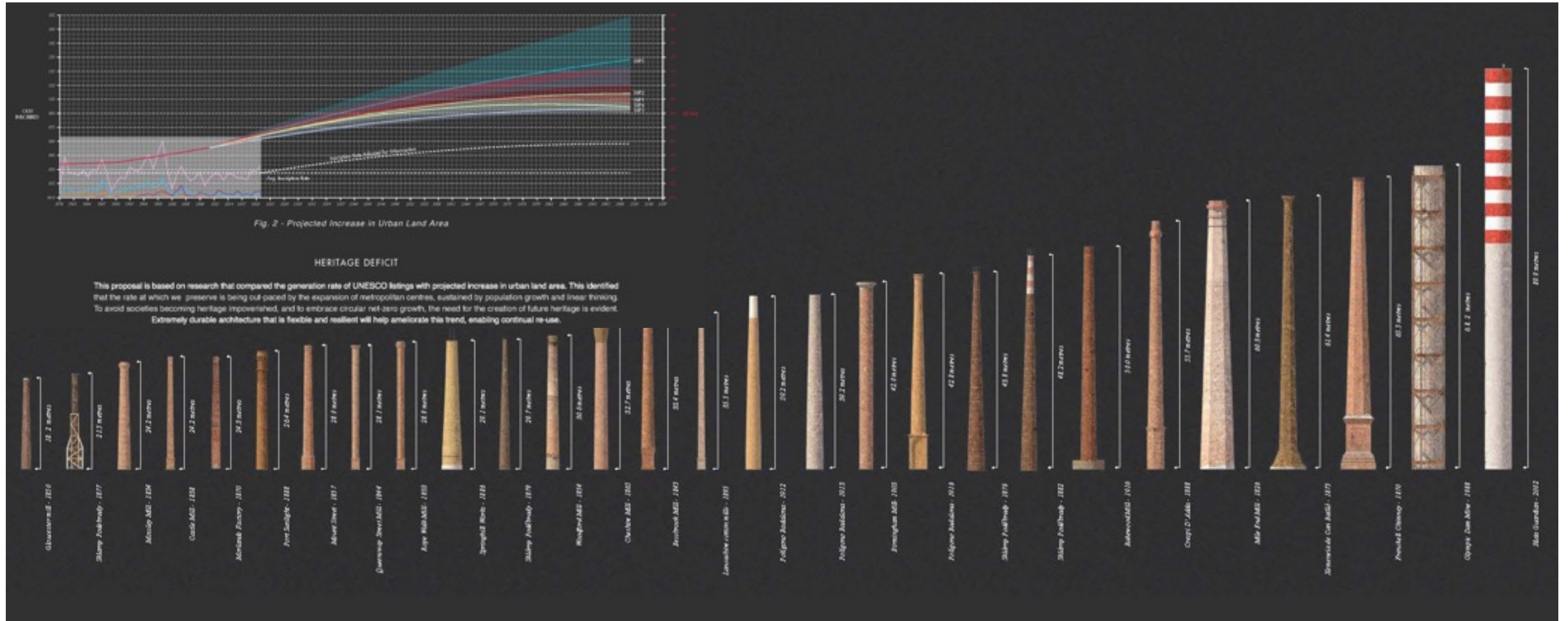
What kinds of spaces are needed to absorb emergent and sudden disruption at a range of scales?



Objectives

- 1. Critique heritage in the context of contemporary society and space to develop research questions on the topic and design schemes which recognise and test the potential for reconciling carbon negative futures and heritage. (Students)**
- 2. Participate in transnational discussion and collaboration to evaluate architectural response in contrasting cultural and climatic contexts. (Students)**
- 3. Evaluate the potential for distributed international architecture studios. (Tutors)**

Sustainability and Heritage



Matthew Graham, M.Arch QUB, 2021

Sustainability and Heritage



<https://www.theguardian.com/uk-news/2021/jul/21/unesco-strips-liverpool-waterfront-world-heritage-status>

AUC Circularity

Latency
Reuse
Reappropriation
Adaption
Performance



Egypt (Cairo)

QUB Experience

Tourism
Leisure
Mobility
Location
Typology



Northern Ireland (Belfast)

Salford Infrastructure

Networks
Energy
Connectivity
Production
Obsolescence



England (Salford & Manchester)

Distributed Design Studio



Birkenhead Park



Port Sunlight



Liverpool



Milan



Val d'Adda



Derrymore House



Q1

Heritage is an expense that is maintained for its cultural and historical value. Today, thinking of efficiency, that raises the question to what extent should we allow sustainable alterations to heritage before it loses its authenticity?

<https://app.sli.do/event/cev8BWCYRWZ4SjJL9SygN3>



Fieldwork



Analysis and Re-imagining Space

Comparison of 40 and 50 - Population factor

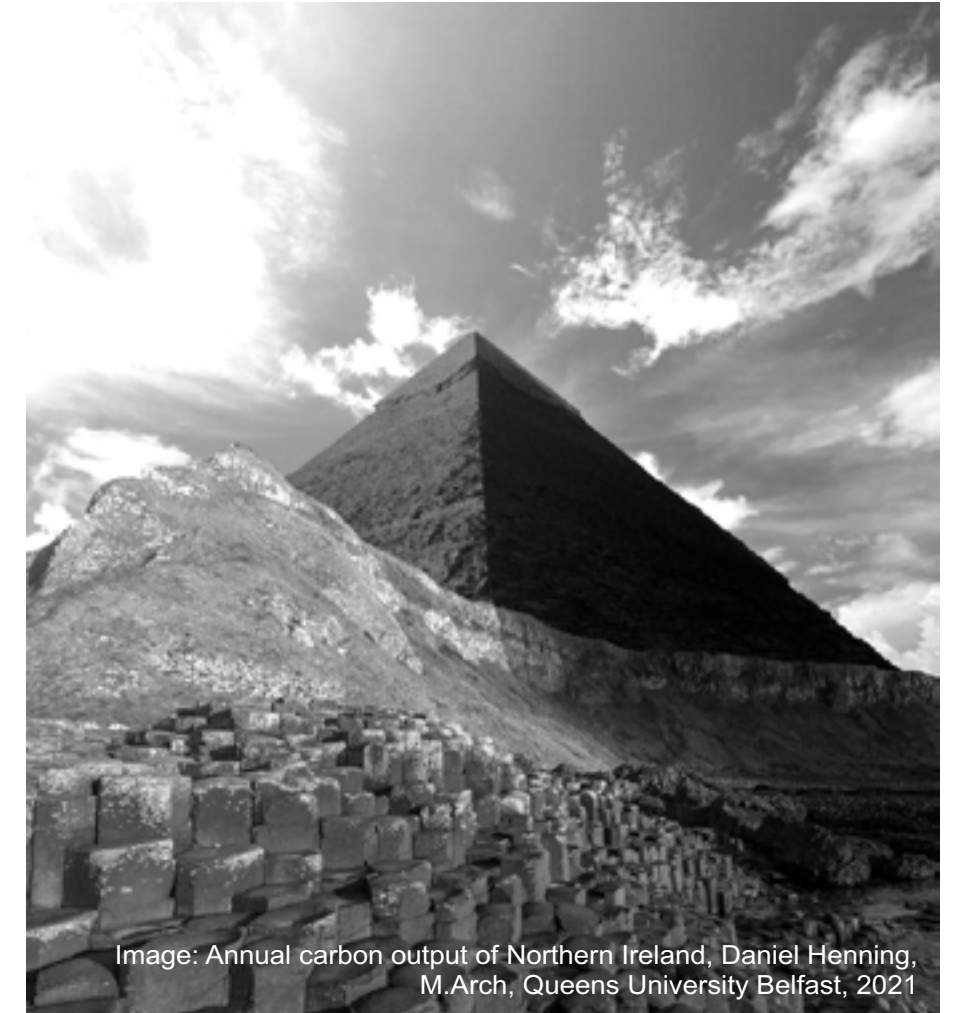
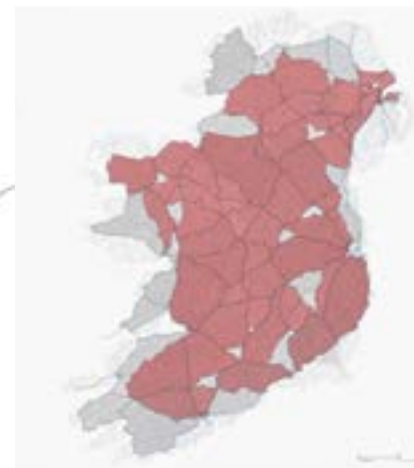
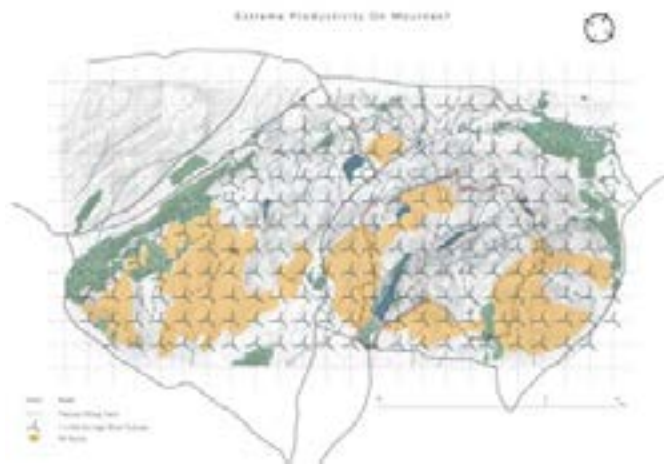
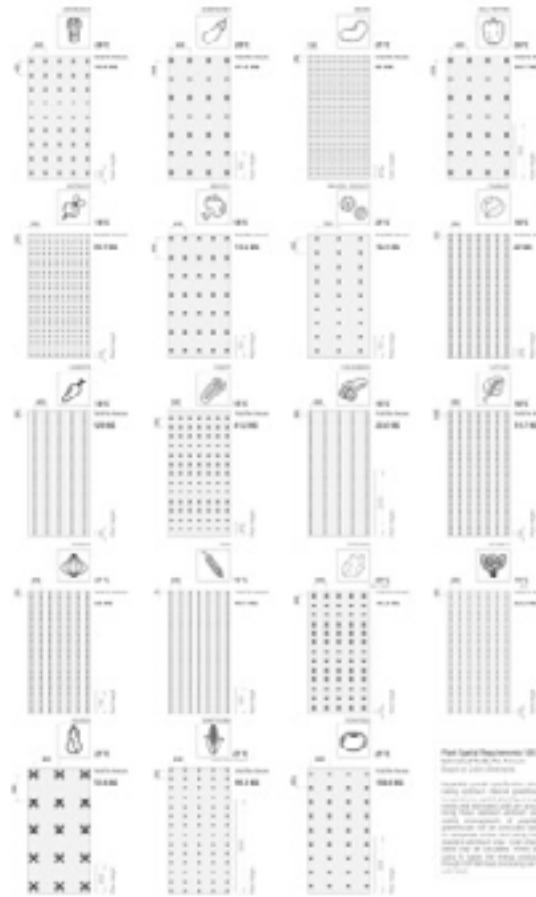
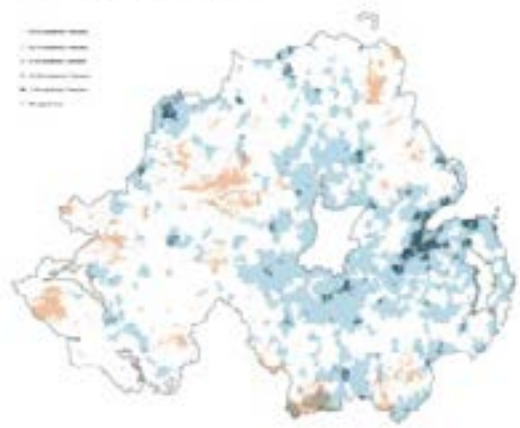


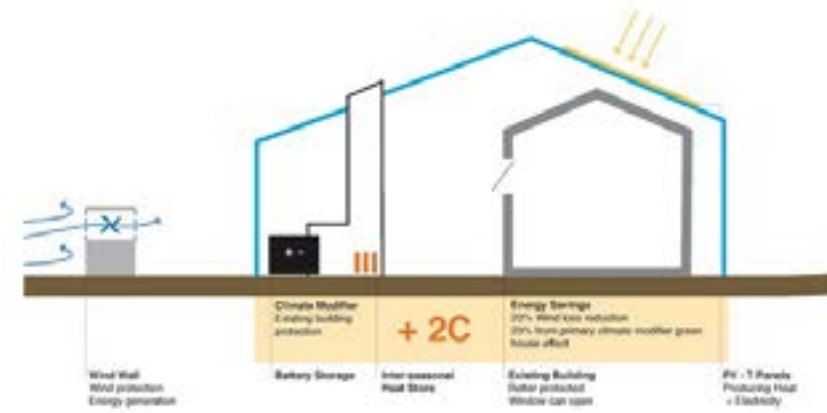
Image: Annual carbon output of Northern Ireland, Daniel Henning, M.Arch, Queens University Belfast, 2021

Design as Vehicle for Testing



Red Sea/White Landscape Project

Red Sea/White Landscape Project
 1. New Infrastructure Layer
 2. Primary Green Module
 3. Thermal Green Infrastructure - Water
 4. Protected Themed Infrastructure - Water



Scale:

Individual

Introduction of
domestic comfort
to extreme
environment

Building

Introduction of
threshold
transitions

Landscape

Structures:



Layered structures to create protected
thermal areas where needed most



Internal structures insulate and regulate
thermal at comfort levels



Structures cover buildings and spaces to
create new microclimates



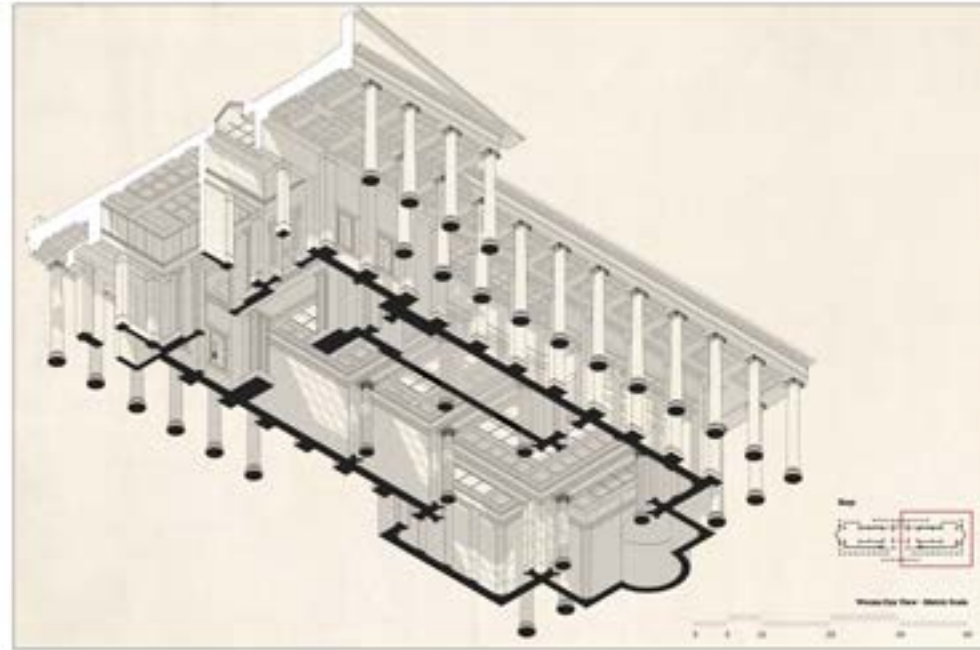
Walls manipulate the microclimate and
shield from the harshest elements creating
a threshold transition zone

SIMULACRA AND REPATRIATION: A CASE STUDY OF DECOLONISING THE BRITISH MUSEUM

LOUISE WESTON

This research has been informed by studying the concept of authenticity in regard to heritage. The objective of this thesis is to present an architectural case study that has the potential to contribute towards the process of decolonising the British Museum. The British Museum trustees have been criticised as being 'the world's largest receivers of stolen property.' (Alberge, 2019) highlighting the need to acknowledge the historical injustices inflicted upon colonised nations during the British Empire. The thesis will demonstrate how architects possess the capacity to stimulate political discourse and instigate social change through their work and design proposals.

In my investigation, I will explore the notion that simulacra can hold equal, and at times even greater, value than the original, and examine the implications this might have on architectural intention and politics. Through this exploration, I aim to uncover the varying degrees to which authenticity serves as an instrumental and influential factor in the public reception of art and how this can influence tourism. The thesis outlines how the growing significance and value of the replica will facilitate the repatriation of disputed artefacts from the British Museum, granting communities and nations the opportunity to reclaim their cultural heritage.



The Facility of Simulacra



CNC Robots Replicating Easter Island Statues

Revising - Reusing - Futuring



COOLING TOWER CELEBRATED AS HERITAGE

07 |



SECTION / COOLING TOWER



SECTION / SERVICING BUILDING

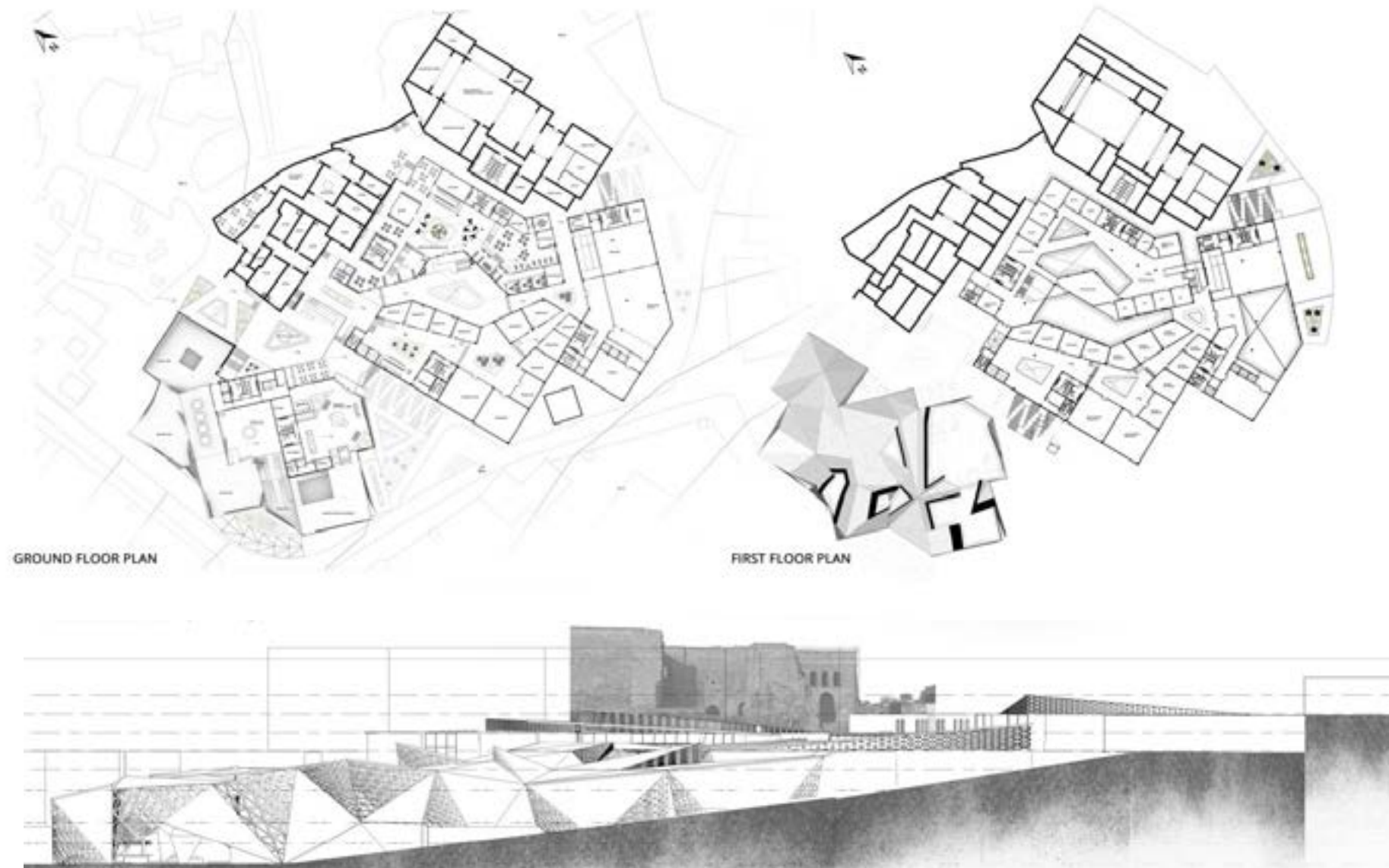


ELEVATION / AID PLANT

URBAN BIO-DOOR: How does it work?
 The facility aims to collect organic waste from households, farms and supermarkets/retails of West Cheshire and Chester Local Authority. The organic waste reaches the Anaerobic Digestion Plant on site, where it gets de-packed and pre-treated, forming a slurry that reaches the digesters through ducts. The digesters are air-tight tanks where biodegradable material is broken down by naturally occurring microorganisms.
 Biogas that is created can be used to generate heat and/or power in other parts of Stanlow Complex. On site, it is processed to remove non-methane compounds and feed back into the national grid as clean natural gas. The digestion process leaves as a by-product a nutrient-rich fertilizer that can be used in local farms.
 To be able to recycle organic waste from the local authority, only 6 digesters would be sufficient, the site holds 16 digesters, so it will be able to handle three times the quantity of organic waste.

08 |

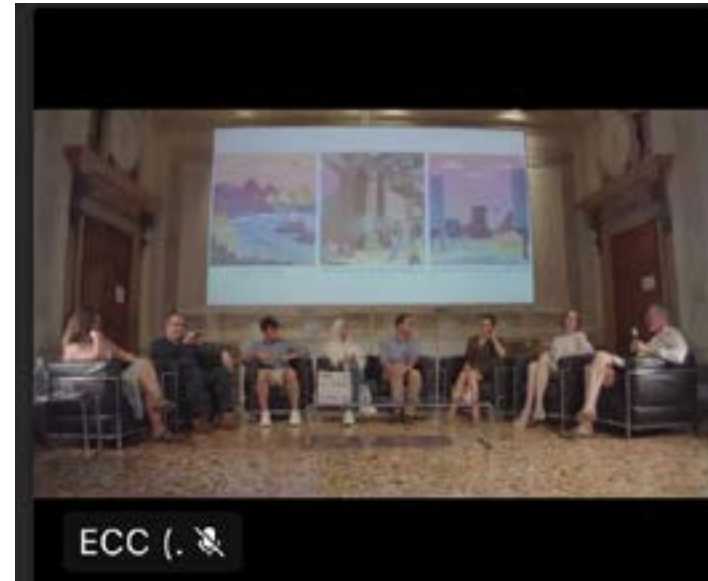
Scarcity and Surplus



Exhibition: European Cultural Centre, Venice May - Nov 2023



Event: European Cultural Centre, Venice 26 June 2023



Distributed Design Studio

Networked Intelligence

Knowledge Transfer

Constructive Alignment