

MEASUREMENT AND VALUE IN THE BUILT HISTORIC ENVIRONMENT: AN ECONOMIC PERSPECTIVE

Adala Leeson
Head of socio-economic analysis and evaluation

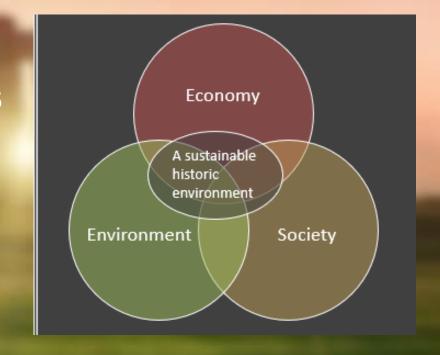
INTRODUCTION & CONTEXT

#1. Heritage has a broad range of values – including environmental values.

These are often excluded (externalities) in our current economic models and decisions.

HERITAGE BENEFITS PEOPLE IN MULTIPLE WAYS

- Archaeology a bridge to the past
- Architecture uniqueness, distinctiveness
- Aesthetic-beauty
- Historic-remembering the past
- Social-identity, cohesion, wellbeing
- Spiritual-faith

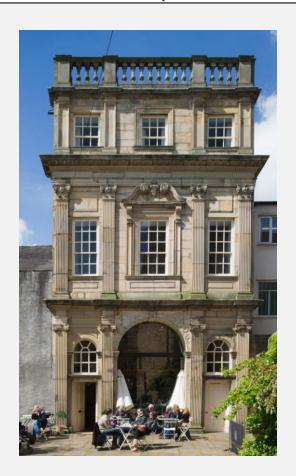


• ...

These are largely not captured using orthodox economic techniques



A TYPICAL BUSINESS CASE: Heritage values largely unmonetised (externalities)



We measure e.g.

Floorspace Land use

Land values Visits

Training Volunteering

To calculate...

Net Jobs GVA

(new and safeguarded) (new jobs and training)

But silent on...

Historical values (collective memories, vintage effects)
Architectural values (distinctiveness, craftmanship)

Aesthetic values (beauty)

Spiritual values (meaning, authenticity, pride)

Environmental values (Embodied carbon,

biodiversity)

THERE ARE CONSEQUENCES OF POOR MEASUREMENT, POOR VALUATION AND GENERAL LACK OF CONNECTION BETWEEN ECONOMICS AND ENVIRONMENTAL (AND OTHER SOCIAL) SCIENCES

'Death trap' mill which has had 250 emergency incidents in the last three years -including arson and serious injuries - to be knocked down



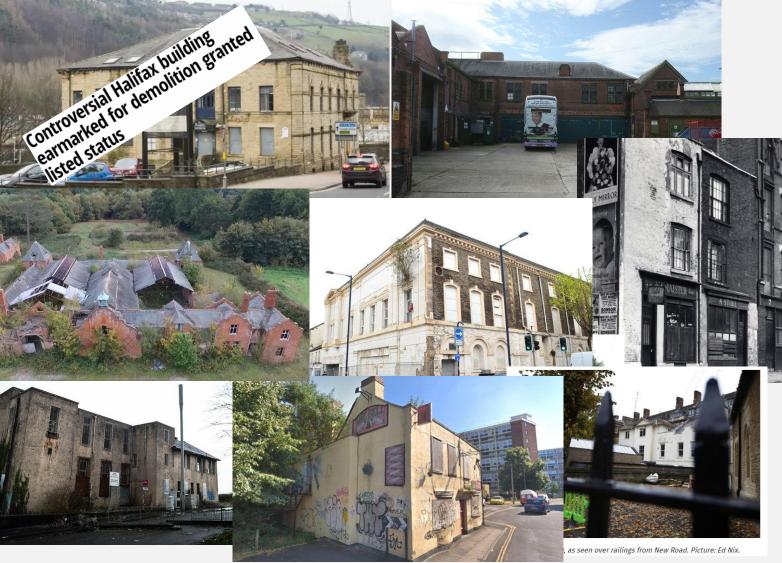


THE

WILL HURST

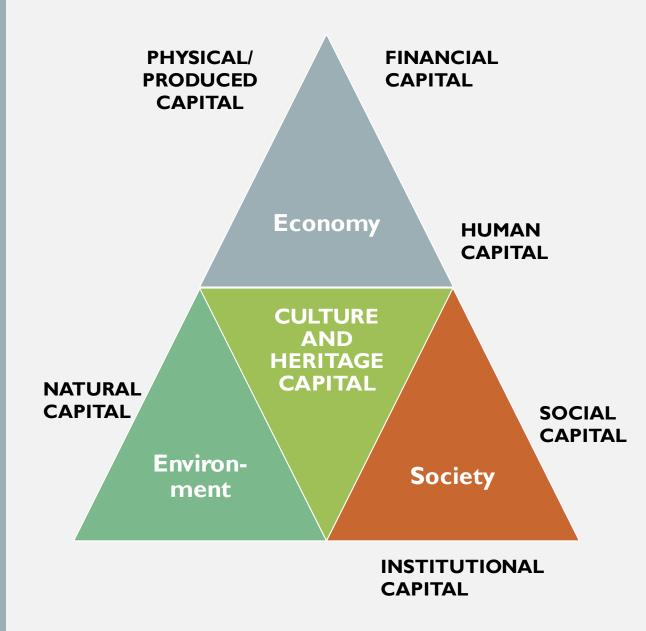
Demolishing 50,000 buildings a year is a national disgrace

Will Hurst Monday June 28 2021, 12.01am, The Times



MOVE TOWARDS A MORE HOLISTIC APPROACH

The culture and heritage capital approach



MEASURING OUTCOMES

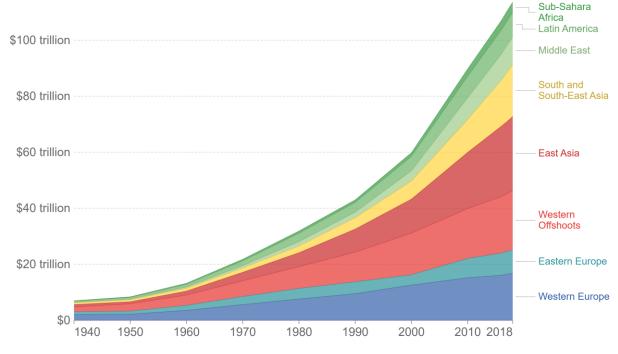
GDP is the core metric of prosperity.

A measure of market output.

GDP, 1940 to 2018

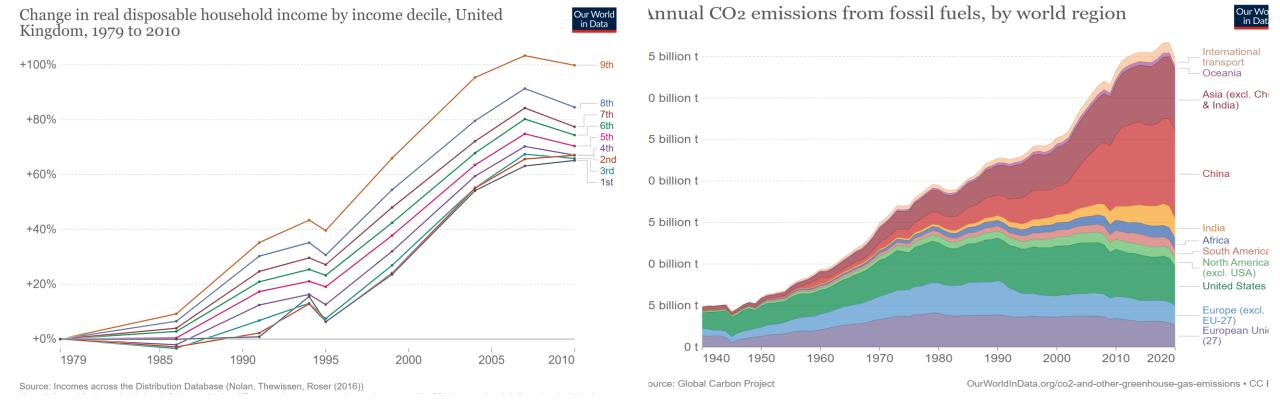


GDP adjusted for price changes over time (inflation) and price differences between countries – it is measured in international-\$ in 2011 prices.



Source: Maddison Project Database 2020 (Bolt and van Zanden, 2020)

OurWorldInData.org/economic-growth • CC BY



"WHAT WE MEASURE INFORMS WHAT WE DO. AND IF WE'RE MEASURING THE WRONG THING, WE'RE GOING TO DO THE WRONG THING." Joseph Stiglitz, Economist, Nobel Laureate

Concern about climate change and rising inequality is fueling a global demand for better measures "Economics is in greater flux, and generating more interesting ideas, than it has for a generation."



The heritage sector must have a voice in this evolution – we cannot afford to be passive agents.

Source: https://www.researchgate.net/profile/Mauricio-Uriona-Maldonado-2 Robert Solow proposes the neo-classical growth theory -D. Ricardo tech is exogenous (1956) Paul Romer, Robert Lucas, "comparative etc., propose "endogenous advantage" (1817) growth theory" in relation to J. Schumpeter "The theory of technology (early 1990's) economic development" (1934) Neo-classical economics tries to erect Classical economics (Adam Smith, David a positivist, mathematical and Ricardo, Thomas Malthus) scientifically grounded field 2012 1800 1900 1950 2000 1850 rommilindi mining li minin militari di militari nodo il nom Thorstein Veblen introduces the B.A. Lundvall " lational term "neo-classical Systems of In Jovation" economics" (1900) (199 J.M. Keynes "The means C. Freeman Technology Adam Smith of prosperity" (1933) policy a d economic "The wealth of char ge" (1987) nations" (1776) Nec (beral Evol econ is proposed by Friedrich List "The National ec nomics

WHAT'S NEXT?

System of Political

Economy" (1845)

Ecological econ, evolutionary econ, doughnut econ, wellbeing econ,circular economics?

Nelson and Winter, focused

on non-equilibrium (1982)

EMBEDDING THE ENVIRONMENT IN VALUATION

#3

Can support the case for the conservation of the built historic environment.

MARKET FAILURE IN THE BUILT ENVIRONMENT

"Extraction of materials is a chief culprit in climate change and biodiversity loss—a challenge that will only worsen unless the world urgently undertakes a systemic reform of resource use," UN Environment climate change specialist Niklas Hagelberg. "Such a reform is both necessary and possible."

UK: 80% of buildings that will exist in 2050 have already been built.

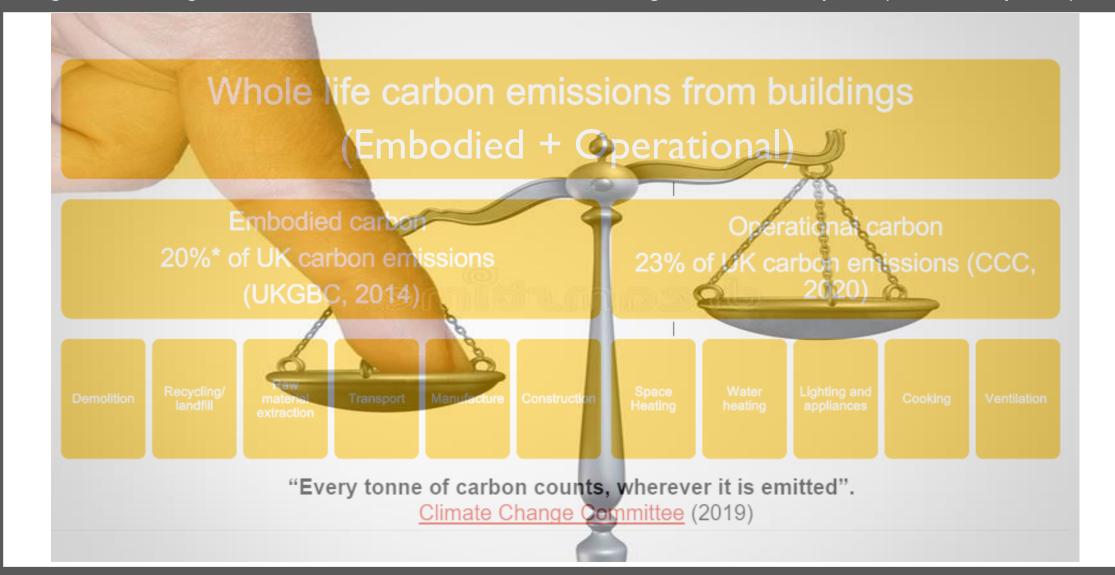
Africa: 80% of buildings that will exist in 2050 are yet to be built.

- "Besides transport, another major consumer of resources is the rapidly growing building sector.
- Resource extraction has more than tripled since 1970
- By 2060, global material use could double to 190 billion tonnes (from 92 billion)
- Building quality <u>sand</u> is currently being extracted at unsustainable rates."

Source (United Nations Environment Programme Global Resources Outlook 2019)

MEASURING HOLISTICALLY, AVOIDED CARBON

E.g. net zero targets based on territorial emissions - off-shoring our carbon footprint? (HMTreasury 2021)



DEVELOPING MEASUREMENT FRAMEWORKS

- Need evidence to articulate the social, economic and environmental value of heritage
 - To demonstrate progress against strategic aims
 - To inform decision making
 - Monitoring and evaluation critical to this

Building Performance Evaluation Framework

Fabric Performance

Energy Assessment Efficiency of systems

Environmental monitoring

Occupant satisfaction

Pre & post testing / calculations of heat loss & air permeability

Pre & post survey metered data, fuel bills, areabased calculations

Pre & post performance calculations & efficiencies (modelled & actual) External & internal environmental data from BMS & other

Questionnaire surveys, interview

Outcomes & Outputs

Contents

Overview of Monitoring and Evaluation Framework	2
Context	
Logic Model and Governance	5
Theory of Change	4
Evaluation Objectives and Key Evaluation Questions (KEQ)	6
Data Collection Methods	8
Evaluation Approach and Outputs	10
	Summary Context Logic Model and Governance Theory of Change. Evaluation Objectives and Key Evaluation Questions (KEQ) Data Collection Methods

HE EVALUATION APPROACH

 Supported by a detailed monitoring and evaluation framework



Rationale: The study of the performance of buildings and understanding their relationship between health and well-being and environmental parameters is required for the decarbonisation of the existing building stock.

External Factors: 1. UK has committed to a net zero emissions target by 2050. 2. Requirement in Each Home Counts, the associated PAS2035 and PAS2030 which sit under the overarching Quality Mark, to predict the outcome and to evaluate the post-works performance. 3. Building Regs – more emphasis on outcome performance in the future 4. Grenfell – fire safety 5. Fuel poverty / equality

Assumptions: focus on retrofit; building is in a good state of repair.

Aims and Objectives

To assess how the design, construction or installed measures have affected building fabric performance.

To assess how the design, construction or installed measures have affected environmental performance.

To evaluate whether the technical and functional objectives of the building interventions / improvements have met expected performance or differ from actual performance. Has the project resulted in a performance gap and / or unintended consequences?

To determine the impact of the project on how buildings' indoor environment affect health, well-being, productivity and learning of the occupants.

To increase engagement and knowledge of

Inputs and Resources

HAZ / HSHAZ

Commissions grant funded projects

Climate Change Programme

Activities

Review project management to assess quality of commission, installation and handover process

Carry out measures to improve the building's fabric thermal performance

Carry out measures to improve the in-use energy performance

Carry out measures to improve the health and wellbeing of the users or occupants by ensuring good levels of indoor environmental quality.

Assess user or occupant

Outputs

Informs feedback, lessons learnt, helps with snagging issues...

Increased EPC / DEC rating

An energy efficient building

Demonstrates compliance with building regulations or another higher standard

Improvement in comfort, IEQ and better health outcomes for the

Outcomes

Allows for snagging,

feedback &

troubleshooting

Reduction in energy

consumption and

carbon emissions

Improves the efficiency

of services and systems

Improves the thermal

performance of the

building

Decrease in fuel bills

Improves the comfort of

the users and

occupants

Positive Nega

Some users /
occupants find new
technologies difficult to
manage

Potential damage to the fabric from moisture related issues.

Potential damage to health & well-being

Insufficient
engagement or
knowledge can result
in rebound effects from
take back behaviours
from occupants

Potential loss of original

KPIs

Energy use

Fabric thermal performance

Airtightness

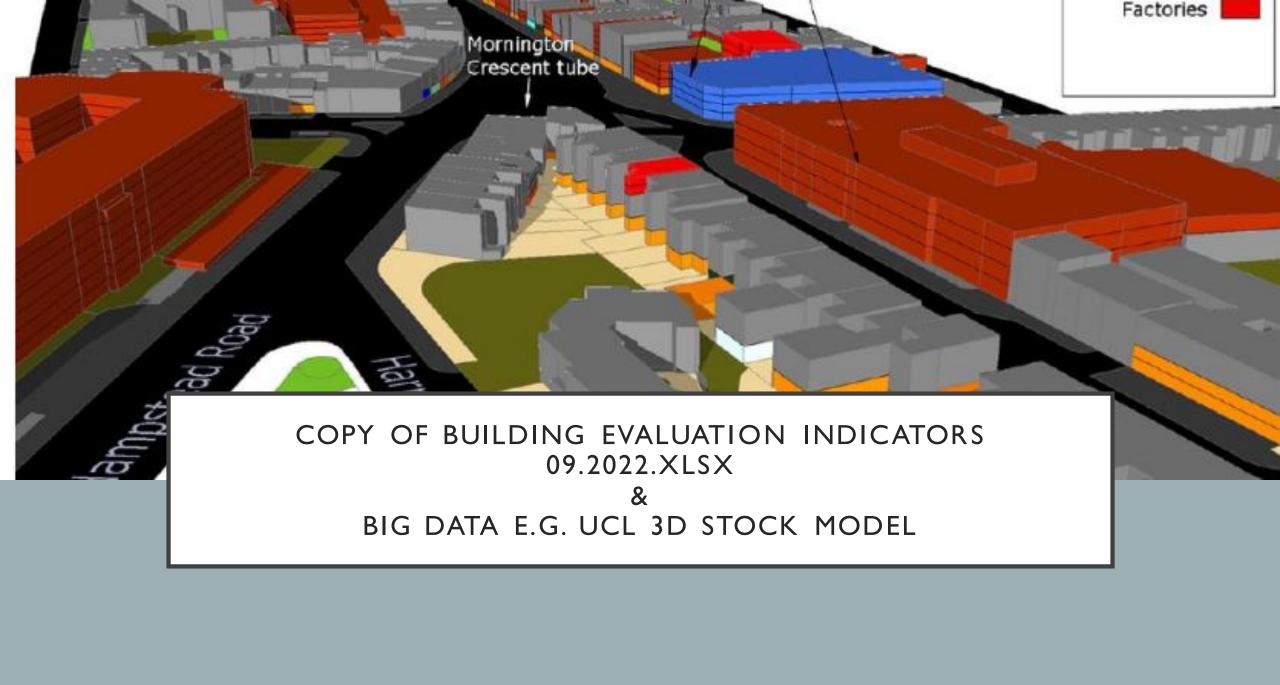
Efficiency of systems performance

Sustainable water use

Overheating

HE EVALUATION APPROACH

- Aims to evidence the impact of an intervention as a whole
- Driven by theory of change and logic model





- **Economics is a powerful tool –** it is used widely it is used in decision making shapes outcomes.
- But economic tools are incomplete here 2 things
- i) 'Externalities' are not folded into current economic systems
 - We need to actively seek solutions to value and embed embodied carbon in policy, business and everyday decisions
 - ii) These can be better embedded in our systems
 - iii) It is vital that the heritage sector is an active partner in the evolution of economic theories
 - iv) But the questions remains as to whether change to the system are sufficient? A paradigm shift?

THANK YOU

Adala.leeson@historicengland.org.uk