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Tackling **R**oot causes **U**pstream of
Unhealthy **U**rban **D**evelopment

"Making Spaces of Possibility" - Public-Private Stakeholder Communication Theory of Change in Urban Development Interventions for Non-Communicable Diseases Reduction

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Context

- In the twenty first century world urban demography, chronic (non-communicable) diseases (NCDs) are causes of rising human ill health, co-morbidities, and lack of positive (salutogenic) functioning (WHO, 1948, 2003; APA, 2018).

- The production of urban space has become widely acknowledged as a key determinant of population health and a sustainable development concern for real estate investors and asset managers.

- Together with environmental performance, human wellness has become an acknowledged dimension of sustainable development but leveraging data for inclusion in risk-return appraisal has not received attention.

- The aim of the research is to fill the gap.

Unsustainable development

- **Brundtland 1987**:

"In essence, sustainable development is a process of change in which the exploitation of resources, the ***direction of investments****, the orientation of technological development, and* ***institutional change*** *are all in harmony and enhance both current and future potential* ***to meet human needs and aspirations****".*

WCED (1987) World Commission on Environment & Development*, Our Common Future,* Oxford, Oxford University Press.

- BUT human induced (anthropogenic) environmental instability has tended to draw attention away from a recognition that **people are part of nature and subject to health risks**.

Blowers, A. and Pain, K. (1999) The Unsustainable City? *Understanding Cities: Unruly Cities? Order/Disorder*, Pile, S., Brook, C. and Mooney, G., Routledge, London, 1999, pp. 247-298.

Institutions and investment

- Classical growth theory observed that urban infrastructure plays a fundamental part in supporting urban agglomeration economies (Marshall, 1920).
- During the twentieth century, money has been “collected, tagged and pooled together in public and private institutions that have themselves become integrated into distinctive geographical and institutional hierarchies from the local to the global level” and transformed into finance capital (Clark, 2005, 99).
- Investment funds are products created for the purpose of assembling the capital belonging to a number of investors and investing it collectively through a portfolio of financial instruments, e.g. large pension funds and institutional investors.
- In the long term, investment returns are produced by property occupiers who pay rent, i.e., a distinctive business model.

Real estate, value, risk

- Investment in and the upgrading and management of real estate assets locks down value in places and makes capital mobile in cross-border markets.

- The creation of new investment vehicles and the rise of Real Estate Investment Trusts (REITs) has made physical property assets divisible, and their ownership fragmented (Lizieri, 2009, pp. 219-246).

- International capital raising, complex financial engineering structures and product diversification now span equities, synthetic financial derivative-based and securitized debt, and commercial mortgage-backed securities (Baum, 2015).

- Investment returns are subject to pricing or capitalisation (cap) rates which in turn are shaped by required returns and expected returns for other asset classes and **perceptions of relative risk.**

In the nature of people

- Since Brundtland, there has been a growing focus on the physical and environmental aspects of sustainable development while the 'S' dimension has largely been ignored.

- Where social criteria have been considered they have been seen in terms of negative anthropogenic causes of the ecological problem.

Heynen, N., Kaika, M. and Swyngedouw, E. (2006) *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*. London: Routledge.

- Yet **social sustainability was at the heart of the Brundtland concept** (WCED, 1987).

- Harvey (1995) observed the need to understand the urban environment in which social and ecological processes are entangled as socially and politically produced.

ESG

RICS professional recognition that
"Sustainability requires an approach to growth that understands, invests in and maintains not just financial resources, but ***human, social and environmental resources****, all at the same time".*

Source: sustainability and the RICS property lifecycle gn 1st ed 2009.pdf

Environmental, Social and Governance (ESG)
Investment in pro-health city infrastructure requires inclusion of data on human health as well as environmental elements in traditional investment business models.

Geo-spatial socio-environmental models can draw attention to human health as a fundamental component of nature and social equity (Edwards *et al*., 2016).

Filling the health gap

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TRUUD University of Reading study explores the potential to fill an ‘S’ gap in health and wellbeing evidence for purposeful urban real estate asset management to make investment a powerful force for societal good.

- Part of a six-year programme led by University of Bristol Medical School investigating the root causes of unhealthy urban development funded by the United Kingdom Prevention Research Partnership (UKPRP).
- The Reading study uses an actor network and systems mapping approach to explore complex relationships between public health considerations and asset management decisions in the urban production process.

Knowledge Gap

- Contribution of population health and wellbeing to socially sustainable urban investment projects.
- Monetary value of the opportunity this presents to improve the urban environment for local communities.

Contribution

Provides evidence of the social value-added by the proposed redevelopment and operation of brownfield assets considering local community sense of identity, security, economic opportunity, social interaction and quality of life:

- Interdisciplinary literature review, documentary analysis.
- Interviews with 21 expert real estate decision-makers, high-level real estate industry meetings.

Found a strong investment appetite for the inclusion of health evidence as a component of social value creation in asset management strategies:

- Local impact analysis is becoming a commercial priority for large-scale urban real estate investment projects and fiduciary reporting.
- A lack of quantitative data has prevented the inclusion of health in finance and investment decision-making (asset management and acquisition).
- Calibrated monetised asset level data is needed to incorporate in risk appraisal and modelling.

Spatial and institutional focus

- Analysis of dynamic actor network behaviours informed a 'Theory of Change' (ToC) to encourage **alignment between** sustainable development with health considerations, while creating **responsible**, **sustainable returns** to investors.

- Major investment funds with portfolios including TRUUD case study partner cities Manchester and Bristol, brownfield sites where change in urban space demand and use is causing declining economic performance, buildings and land have been abandoned, leading to urban decay and city **health and well-being spatial inequities.**

- Sustainable redevelopment is expected to secure local community support, planning permissions, and attract **sustained inward flows of capital for deployment in future urban projects from investors with long-term investment horizons**.

- Collaboration with the investor management teams to trial the application of a Health Appraisal of Urban Systems Model (HAUS) **model monetizing** benefits of health considerations in the property market (Understanding urban health costs with HAUS – TRUUD).

Questions addressed

1. What was the likely impact on the health of people living within a 300-metre radius of the site before work began?
2. How might proposals for the redevelopment change health? What does the strategic approach offer in addition to minimum policy aspirations for the site?
3. How useful is the approach for informing site development decision-making and investment appraisal?

HAUS Model

- HAUS is not an epidemiological model but instead tries to quantify the value of expected changes to health.
- As an impact-pathway approach to model health effects, it adds a level of robustness to modelling normally only used in air quality appraisal (Silveira et al., 2016).
- It cannot describe interactive effects. It can only show single pathway effects, although overlaps are considered in both assumptions and aggregation of findings.
- It brings together detailed evidence on epidemiology and costs of illness at a level which allows for understanding trade-offs between health in land use scenarios.
- As with all linear models, variable choice can influence findings, so sensitivity analysis is important to test assumptions – further modelling could explore benefits to populations within a wider area of influence.

of changes to health related to the environment in each of the 5 scenarios.

Headline results

- In each case, the additional health economic savings to the local authority minimum standards for the area were calculated over different time periods.

- In the case of a scheme including a large urban park, an additional £234 million in health economic savings over 25 years was calculated.

- Benefits are likely to extend to the mitigation of premature mortality, encouraging physical activity, helping prevent chronic diseases such as diabetes, improving mental health, wellbeing and life satisfaction and may also extend to communities outside the redevelopment area itself to non-residents using the site for work or leisure.

- Air pollution is a significant hazard to health in all scenarios in our study. Larger sites have more scope to make a material change to air pollution levels for residents beyond the site boundary.

- Measures to reduce levels of air pollution outside the scope of the management team could improve health further.

Emerging monetized evidence

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Example	LA Objective	Development	Health Attributes	Social Value added
Pre-development	Revive city centre through creation of attractive mixed-use spaces that enhance employment and the public realm	3 mixed-use buildings New public realm and soft landscaping	Walkability, cycling, air quality, permeability, biodiversity	LA target: £12m **Investor: £13m**
Under development	Revitalise underutilised city space to improve public realm, accessibility and connectivity	Mixed-use buildings, public squares	Walkability, cycling, air quality, noise	LA target: £23.4m **Investor: £43m**
Post-development	Regeneration of disused site to revitalise public realm and improve connectivity	New public park and soft landscaping	Walkability, access to open spaces, crime reduction and community safety	LA target £40m **Investor: £234m**

Source: Eaton, Akakandelwa, Pain, Tannor and Hunt.

Methodological challenges

- Confounding factors, for example, the presence of greenspace may not translate directly to health-promoting outcomes due to factors such as crime/safety and life-course opportunities in a given area.
- In the case of this study, it was necessary to assume a static population based on proximate similar populations in order to facilitate comparisons between scenarios.
- Non-resident health modelling for groups such as commuters and leisure users, demand more data gathered over a period of time pre- and post- completion.
- Sensitivity analysis can explore how findings might change if the model was run based on different demographics.
- A city-wide assessment of potential spillover effects from other development nearby would be required to ensure the health benefits of a scheme are not overestimated.

Further reflections

- Air pollution requires a transcalar response due to differential exposure to environmental conditions and health risks (Barlow et al., 2017, Developing a research strategy to better understand, observe, and simulate urban atmospheric processes at kilometer to subkilometer scales. *Bulletin of the American Meteorological Society,* 98 (10)).

- Though not required for our present study, a large interdisciplinary team of researchers and access to individual medical records would be needed to allow **pre-existing health conditions** and **environmental health susceptibilities** to be taken into consideration.

- Health costs are both financial – medical treatment costs and the costs of lost productivity – as well as **intangible but real costs** of pain and suffering.

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