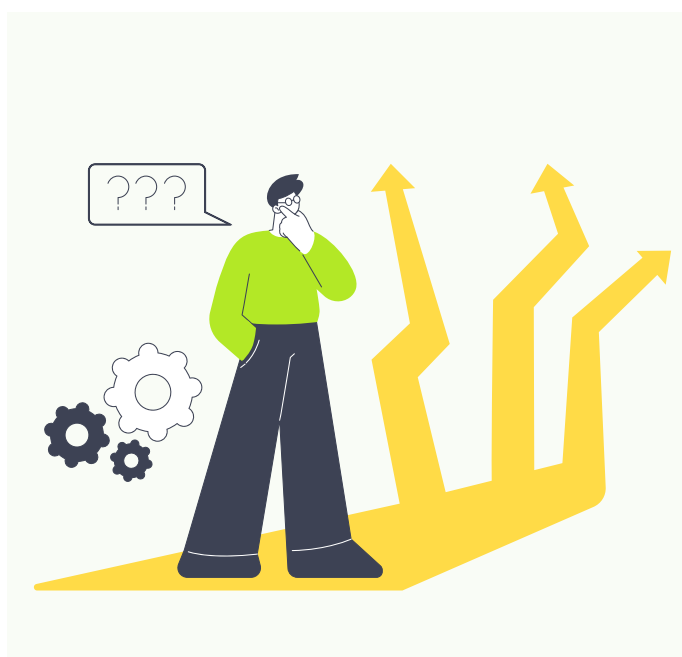




Valuing the 'external' social costs of unhealthy urban development



A range of qualitative appraisal tools and methods for policy makers already exist, but the few quantitative tools that allow policy makers to estimate changes to health focus on a limited number of environmental characteristics or subject areas, such as active travel. Some valuation methods used in policy appraisal don't always enable understanding of place-based analysis, in terms of understanding where in society the burden of illness may fall.

Our response: the HAUS model

We have created an economic valuation model – **Health Appraisal of Urban Systems**, or HAUS for short – that allows developers or planners to consider and adjust a range of health factors. HAUS provides unit costs for more than 70 health outcomes, disaggregated so that they can be attributed across multiple agencies from a societal perspective.

For example, in a recent application we were able to show that increased green space for one urban area could lead to improvements in activity and mental health, reductions in diabetes, cancer and childhood obesity, and could even reduce premature mortality. Over 25 years these benefits could save the community between £20-35 million through averted health costs.

HAUS has been developed using new, large-scale mixed-use development proposals as a starting point, but with modification could be applied more widely. Prior projects, for example, have used a similar approach to estimate risk from flooding and overheating to social housing and healthcare providers.

The issue

The use of economic valuation approaches in measuring, and accounting for, non-market environmental and social “goods and services,” including human health outcomes, has a substantial history. However, its integration into mainstream decision-making has been slow for a number of reasons, not least the considerable challenge of quantifying intangible aspects of health in welfare terms. This lack of uptake does not appear to imply a lack of appetite; indeed, there may be multiple areas of potential application.

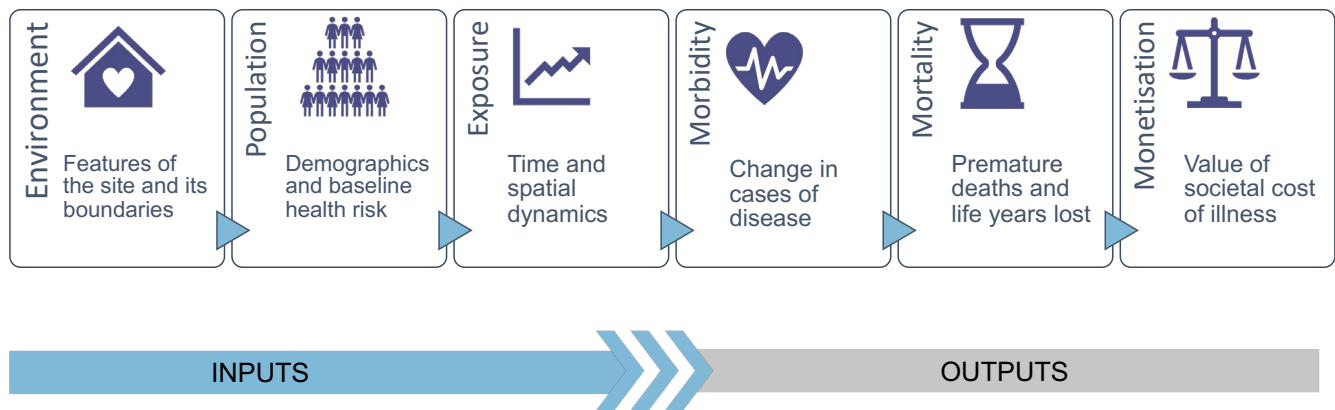
University consortium



Local authority partners



How HAUS works



HAUS has three main features:

1. HAUS synthesizes the available evidence into one useful resource to allow policy makers to access data on measurable, quantifiable changes to health which have been associated with the urban environment and associated costs of health;
2. Users can estimate the potential magnitude of impact which a specific intervention may have on the health of residents, and to compare health outcomes in alternative scenarios; and
3. HAUS offers a method for valuing these health impacts, for use in cost-benefit, or cost-effectiveness analysis of alternative projects, policies or other intervention forms.

Defining urban form

The HAUS model is driven by a series of systematic reviews into the medical evidence on associations between the urban environment and changes in health. These reviews include searches of 8,000 medical studies and 14,000 valuation studies, with data from 450 primary studies applied in the final modelling, as well as new research which completes gaps in the evidence on the cost of depression and lower back pain. The model uses more than 30 characteristics of the environment, grouped into six main categories: Building Design, Community Infrastructure, Natural Environment, Socio-economics, Transport and Climate Change.

Identifying urban-health impact pathways

The epidemiological literature reported in these systematic reviews allowed us to identify more than 200 impact pathways that observe a causal path from a specific environmental change (such as air pollution or increased green space) to a health outcome (such as increased risk of asthma or diabetes). Impact pathways are defined here as estimates of the magnitude of effect that a specific change within a single characteristic of the urban environment may have on a specific health outcome. These impact pathways are defined by the specific parameters from the original source study, or studies, and include detail of the specific environmental change, the size and scale of the effect, the population demographics of the original study, and the individual health outcome.

Structure of the HAUS model

The HAUS model is initially a spreadsheet-based system, for ease of use and software availability, created in Excel software (Microsoft, 2023). We present health impacts in terms of estimated attributable changes to cases of illness, deaths, years of illness and years of premature life lost. The tool includes the following:

1. **User input sheets:** allowing the user to identify key assumptions around each scenario for assessment, such as population size and level of exposure to each specific environmental feature.
2. **Data sheets:** Data on the demographic profile of the affected population, individual health risk, life expectancy and unit costs of illness.
3. **Outputs:** Detailed comparisons of results and valuations of health impacts, and a dashboard which allows the user to quickly identify headline information across different scenarios.

Next steps

We are launching a beta version of the HAUS model as an online tool for policy makers and urban development stakeholders. We will be inviting people to test the online model before it is launched more widely.

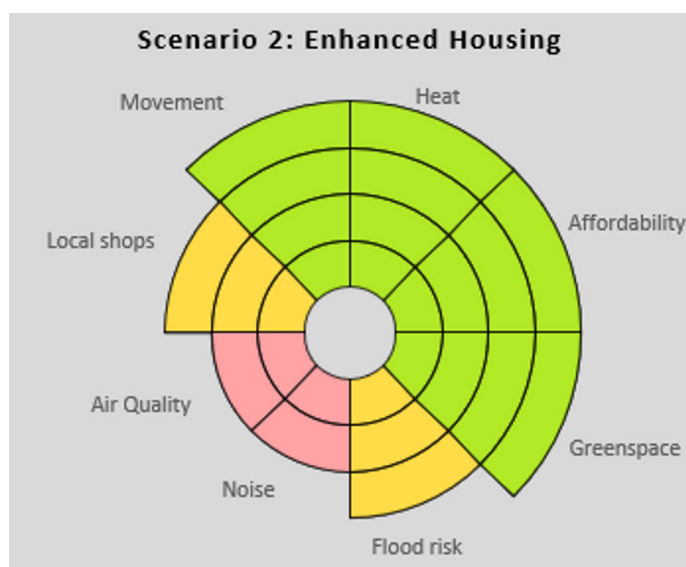
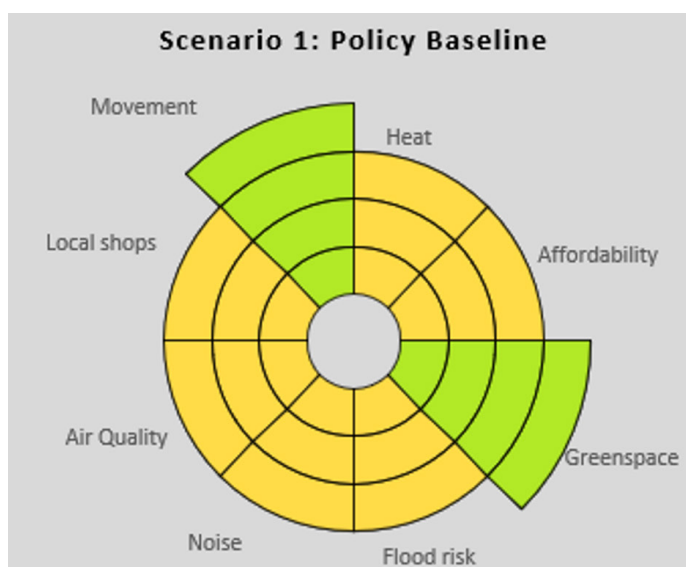
About Truud

'Tackling the Root causes Upstream of Unhealthy Urban Development' (TRUUD) is a 5-year, £6.7m research project that aims to design policy interventions to support the development of healthier urban environments. Our research seeks to promote a fundamental shift in thinking about how to prioritise healthy urban development. We are funded by the UK Prevention Research Partnership.

Contact the authors

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The HAUS model can be used to compare the benefits of alternative scenarios for a neighbourhood, for example; comparing a baseline policy approach with one which includes enhanced housing



Key: health outcomes

