2.1 Introduction

Existing State Integrated Model:

This model combines two distinct systems to function effectively. The first system, described in the previous section, involves relevant data collation through an ETL process (Extract, Transform, and Load). This process allows us to gather pertinent data and analyse it based on our Living Infrastructure Framework, establishing a benchmark state. This benchmark state is then used to compare design proposals, enabling the identification of various constraints and opportunities efficiently.

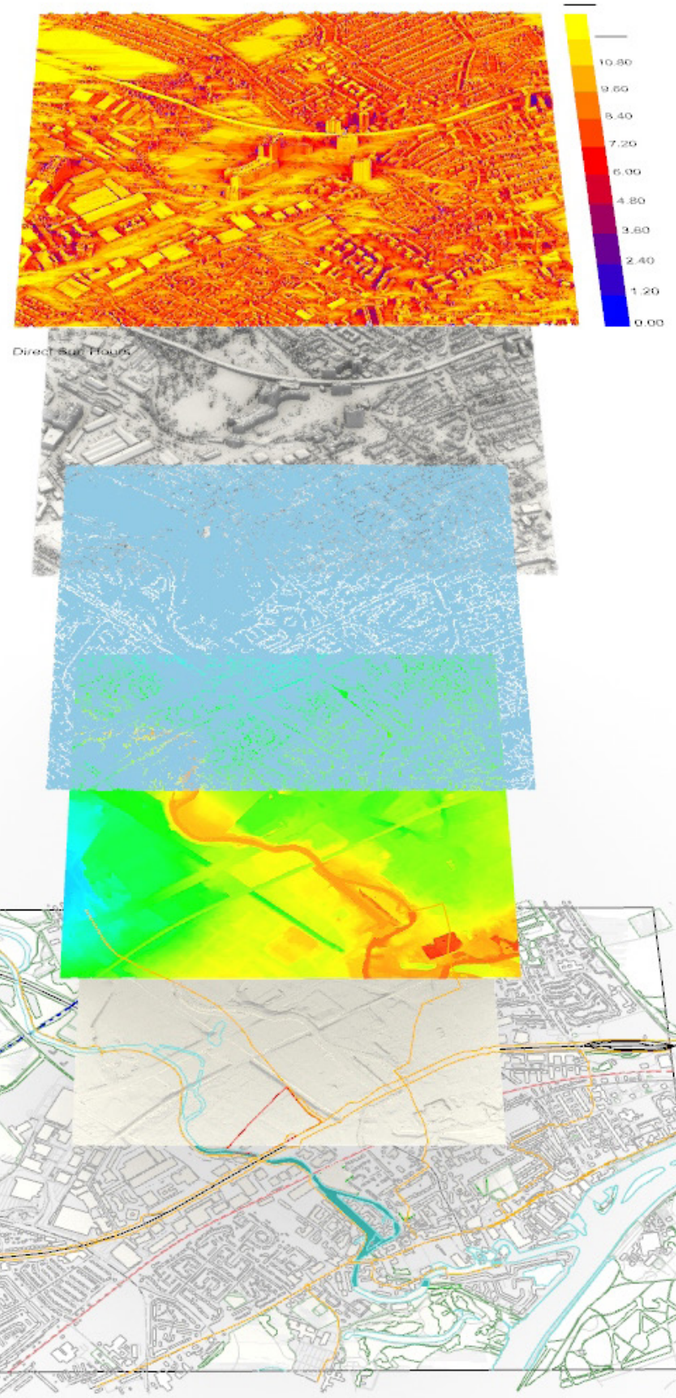
The second system encompasses a range of analytical capabilities, specifically tailored for this project to meet a unique set of goals defined by the client and project stakeholders as the project progresses. The analytical capabilities selected for GSK projects include the following:

Environmental Evaluation Capabilities:
Sunlight Analysis: Assesses the impact of sunlight on various areas to optimize natural lighting.
Wind Analysis: Evaluates wind patterns to enhance comfort and reduce potential wind-related issues.
Suspended Pollutants Analysis: Monitors airborne pollutants to improve air quality and health standards.

Views Assessment Capabilities:
Sky View or Space Openness Perception: Measures the openness of the sky view to enhance the sense of space.
GSK Visual Impact Assessment from Selected Locations: Analyses the visual impact of the project from key vantage points.

Spatial Accessibility and Connectivity:
Entry Points and Pedestrian Flow: Examines pedestrian entry points and movement patterns for improved accessibility.
Cycling Flow Analysis: Assesses cycling routes and traffic to support sustainable transportation.
Ground Floor Uses and Activities Assessment: Evaluates ground-level activities to enhance public space usability.

Remote Sensing Capabilities:
Digital Terrain Model Analysis: Analyses terrain elevation for effective land use planning.
Digital Surface Model Analysis: Provides a 3D representation of surface features for accurate modelling.
Vegetation Object Model Analysis: Evaluates vegetation distribution to support ecological planning.
Normalized Difference Vegetation Index (NDVI): Measures vegetation health and coverage.
Thermal Bands Linked to Urban Heat Island Effect: Monitors temperature variations to mitigate heat islands.



Existing State Integrated model