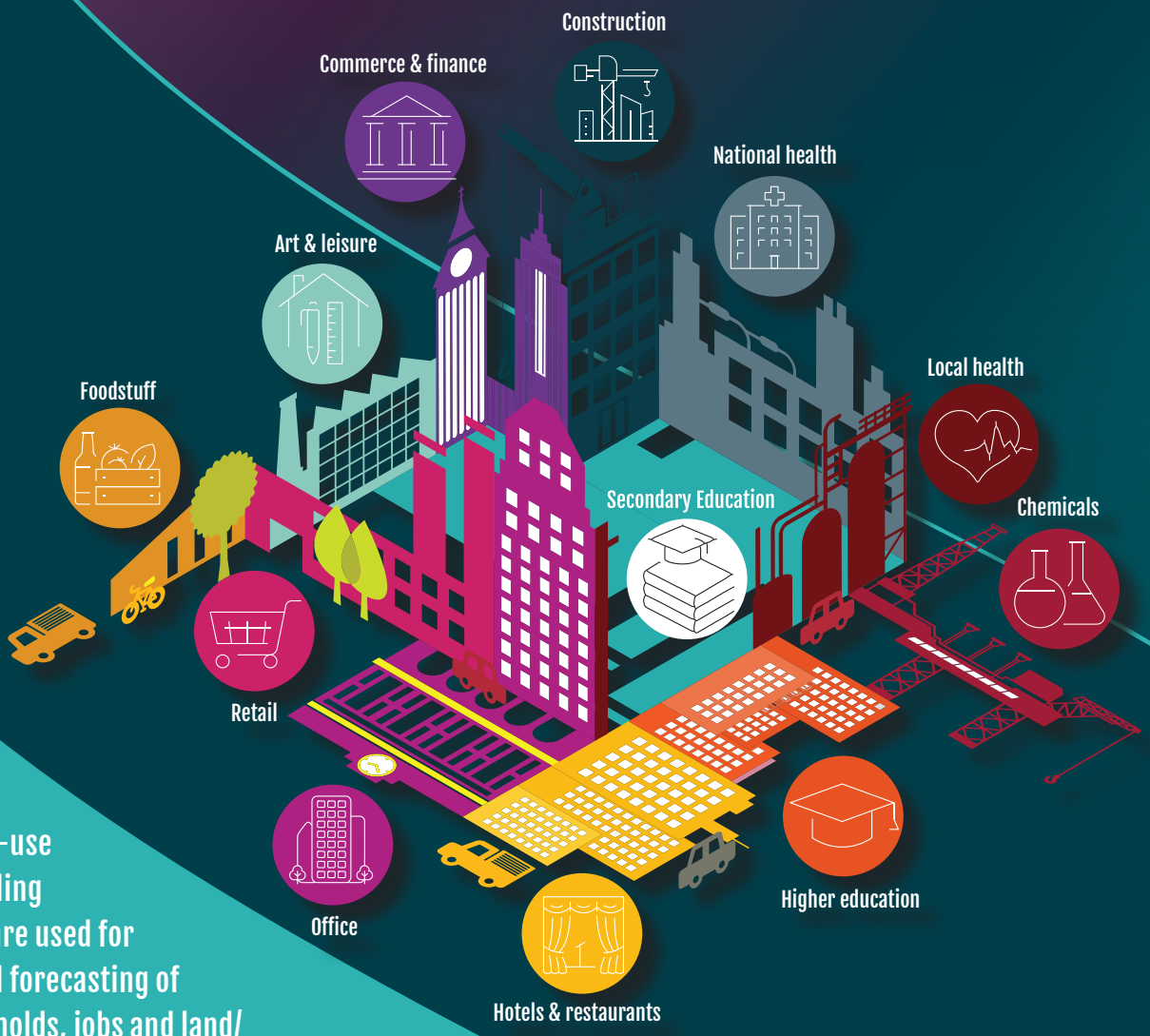
DELTA LAND-USE MODELLING

LAND-USE TRANSPORT INTERACTION (LUTI) MODELLING



A land-use modelling software used for spatial forecasting of households, jobs and land/floorspace. It represents a complex set of dynamic linkages between several main drivers of location choice, including accessibility and demand for land/floorspace.

It is generally applied with an interfaced transport model to create a land-use transport interaction (LUTI) model, so that over time the location of activity from the land-use model forecasts the demand as used in the transport model, and the transport model then produces generalised costs of travel which the land-use model uses to calculate accessibility. Both transport model and land-use model may be held constant (switched off) where a simplified approach to LUTI is required.

Why might you need a land-use model

A land-use model is of value where the impact of investment is broader than transport. A LUTI model can help answer questions around development, economic growth, regeneration, social and distributional impacts and the way they interact with transport and accessibility.

A land-use model will also help users understand displacement of activity resulting from transport or development, as well as quantifying the net national impacts to feed into standard 'TAG' type appraisal.

DELTA has a set of end processes which allow the user to easily get to the results, and to visualise them in dashboards or GIS packages. Both transport and development schemes can be easily tested in the model.

How are models typically deployed

The specification of any new model is tailored to match the client requirements'; What is the intended use of the model? How might it be used? What policy goals are the focus of the project?

DELTA has been developed to significantly improve the way the user can interact with the model and its outputs. Modern data science methods have transformed the way that models can be built, calibrated, interrogated, and ultimately presented to clients and stakeholders.

SYSTRA continues to maintain a GB level strategic land-use model (Shared National Model) which can be applied on-demand for clients, without the need for a long-term modelling assets.

Future development

SYSTRA is receiving interest and demand for land-use modelling from markets outside of traditional transport planning, and DELTA will be developed accordingly to meet the emerging needs. This includes decarbonisation, future hybrid working patterns, CAAV and electrification and disaster preparedness.

SYSTRA is continuing to support clients with existing in operation models and offer enhancements and updates for those models.

As part of longer-term development SYSTRA is exploring the potential of varying the model design to allow a simpler, streamlined, user friendly package to reduce complexity and increase ease of access to the tools.