

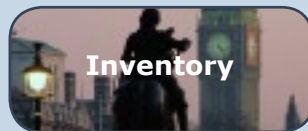
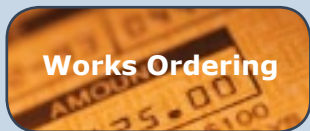
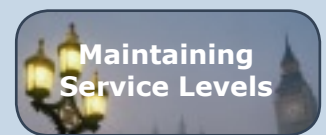
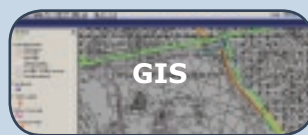
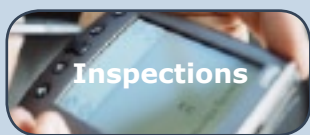
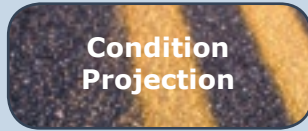
Infrastructure Asset Management Solutions

## Asset Management - The Objective

"Meeting the required level of service in the most effective way, through the creation, maintenance, operation, rehabilitation and disposal of assets, to provide for present and future customer needs."

Nothing is more important than the management of infrastructure. The whole of society is dependent on the land and property assets which form the basis of our living and working space, and associated transport, communications and services provision. Yet, this infrastructure includes some of the most complex types of assets to manage, including buildings, highways, public areas and amenities, structures, and the distribution networks for basic services.

Effective management of the assets implies optimised decision-making processes, aimed at selecting the strategy which offers maximum cost-benefit advantage and minimised risk. This inevitably requires planning of the complete asset life-cycle, utilising accurate historical information to assess the current status and project into the future.



### Asset Life Records

Only by obtaining access to every pertinent item of data about the life of an asset can optimum strategic decisions be made. Throughout the life of an asset, data emanates from a variety of sources. Inspections, condition surveys, customer reports, accident records, cyclic and preventative maintenance, failure and repair records, all contribute vital information.

These different types of data may be recorded using a variety of different referencing methods, including street, property or asset codes, public names, satellite positioning, and map co-ordinates. The Insight range of modules provides a means for all this to be accommodated within a single system. Whichever method of referencing is used for each life-cycle event, the totality of information will always be accessible for decision-making purposes.

### Establishing Service Levels

The objective of managing the infrastructure is to provide the required levels of service, which may be established either through commercial or organisational goals, or from legislative demands. Service levels may be expressed in a variety of ways. There may be a requirement for a given volume, such as accommodation of buildings/homes, or transport/distribution network capacity; there may be goals in reliability or availability; there may be qualitative aims such as cleanliness, or environmental/energy efficiency objectives.

The establishment of required service levels forms the basis for asset management plans, enabling the selection of optimum strategies, needs-based budgeting, and subsequent performance monitoring to assess whether target service levels are achieved.

## Gazetteer, Networks and Asset Register

A fundamental requirement is the facility to maintain accurate information related to all infrastructure assets. The Insight range provides a powerful, and dynamically tailorable asset register. At the core of the system is a nationally compliant Street and Property Gazetteer, with import/export options. Multiple network referencing systems may be overlaid, with automatic translation from one referencing system to another. This allows the most appropriate referencing methodology to be used for each requirement, whilst still retaining full integration.

Another uniquely powerful feature of the Insight range is the ability to define "areas of interest" and "asset groups" which may be used for any form of analysis and reporting throughout the system. It becomes the simplest of tasks to compare the performance between asset types, or provide area by area analyses. These groupings are entirely dynamic, and may be varied to meet new requirements as they evolve.

## Asset Condition and Valuation

Coupled with this register of assets and associated data, Insight provides powerful extraction and data manipulation tools. Accurate quantification of inventory, together with records of condition, age, and treatments/maintenance works can be used to provide valuations, or other overall indicators of asset management performance. These are also increasingly being viewed as a means of establishing targets for the future.

However, these methods of monitoring and establishing targets will only prove effective if matched with a means of determining strategies to achieve the established targets, and it is in this area that the Insight range of products excel. The concentration of all forms of historical data within an integrated system framework enables accurate evaluation of the effects of different equipment types, the relative costs of preventative and "repair-on-fail" maintenance approaches, and the comparative cost-effectiveness of repair/renewal options.

## Strategic Life-Cycle Planning

Insight provides a sophisticated means of analysing current and historical condition data, to assess rates of deterioration. Together with the application of life models, this can be used to project into the future, and predict potential service levels. The effects of different treatment or maintenance strategies can be compared, and for each asset, an optimum approach selected.

Facilities are provided for prioritising the allocation of funds in order to achieve maximum effectiveness and return on investment. Differing levels of budget, and strategies for allocation, may be compared, and predictive modelling functions used to forecast long-term effects.

Having adopted decisions, the effects are then monitored. This ever more accurate information is then made available for refining the process of determining strategy in subsequent years. Thus, the total integration of the Insight range provides a platform for achieving continual year-on-year improvements in "Best Value" management.

# INSIGHT ENTERPRISE

Insight Enterprise is designed specifically to provide an integrated solution for the management of infrastructure, including land and property, highways, structures, public lighting, and distribution networks.

The flexible and comprehensive facilities make it the ideal product for managing the life-cycle of assets, and ensuring that required service levels are achieved and maintained.



## Insight into Advanced Technologies

The Insight product range harnesses the best of leading-edge technology - not for its own sake, but to provide powerful, easy-to-use solutions to meet organisational objectives. Symology carefully research the technologies, and craft them into cohesive, integrated systems which provide a natural, intuitive interface for day-to-day use by all levels of staff.

The sophisticated application of flexible data storage, and multiple referencing technologies, is crucial in ensuring that all required data can be combined for determining optimum asset management strategies.

Advanced Windows ActiveX technology is used to provide sophisticated embedded mapping functionality, including the ability to plot inventory, works or any other items. Transfer between the database and the map, in context, is instantaneous, effected by a simple button-push, and all without the costs and overhead of providing a full GIS system on each user's computer.

System-wide facilities are provided to store multimedia files such as video footage, digital photographs and scanned documents. On-line enquiry output may be displayed in a grid, with the user dynamically selecting the precise columns of data required. The data may then be exported to office products for further processing, or in XML format. The XML option also enables a style sheet to be generated so that the XML file can be viewed in any modern web browser. The embedded report layout designer (based on Crystal Designer) provides seamless access to further filter the grid results, format the display, introduce graphics, produce totals, sub-totals and collate and sort the data in any way required.

The GIS may also be utilised for output of graphical models. For example, current asset condition or capacity, and projected effects into the future of different expenditure models, can be brought to life by display in map-based form.

Insight does not only provide the most advanced system for optimising strategies; it provides powerful, effortless, ways of presenting information such as budget needs, objectives and asset management plans in a way which can be assimilated and understood easily by senior management.

# INSIGHT ENTERPRISE

## Functional Overview



### Range of Assets

- Highways and Transport
- Public Buildings
- Housing and Properties
- Distribution Networks
- Bridges & Structures
- Civic Amenities
- Parks and Open Spaces
- Public Lighting & Furniture
- Safety Barriers & Guardrails
- Kerbing and Gullies
- Subways
- Traffic Controls
- Vehicle Parks
- Waterways
- Coastal Defences
- Airports, Ports & Harbours

### Street Gazetteer

- Gazetteer maintenance system
- Additional user-defined data

### Areas of Interest

- Polygon plotting on the map
- Geographic view/update security
- Political boundaries
- Divisional Office areas

### Inventory of Assets

- User-defined entities/attributes
- Comprehensive analysis tools
- Bulk updating facilities

### Location Referencing

- Textual location descriptions
- Street referencing
- Property referencing
- Inventory Item referencing
- Section referencing
- Map co-ordinates
- Chainage-based
- Cross-Sectional Positions

### Mobile devices

- Latest technologies
- Multi-function devices
- Map-based functions
- Satellite positioning
- Digital photography
- Remote Web Services connection
- Symology-developed software
- Automatic server compatibility

### Strategic Asset Planning

- Service Levels
- Defect/Observation recording
- Visual and machine surveys
- Condition assessment
- Treatment selection
- Condition projection
- Life deterioration modelling
- Service level prediction
- Budget needs assessment
- Budget effects modelling
- Alternative budget strategies
- Cost/Benefit evaluation
- Best Value funds allocation
- Performance/Target monitoring

### Integrated Information

- Complete Asset Register
- Life history
- Condition Analysis data
- Treatment options
- Predictive modelling
- Structural Maintenance costs
- Planned Maintenance costs
- Ad-hoc/Routine Maintenance costs
- Customer Service issues
- Risk management

### Universal Facilities

- Whole Life of Works processing
- Interactive map links
- Spatial Analysis
- Full module integration
- Inbuilt customisation options
- Intuitive user dialogue
- Customisable data display
- Office Products interface
- Access security
- Historical audit trails
- Performance Indicators

### G.I.S.

- Gazetteer and Inventory maintenance
- "Area of Interest" definition
- Viewing/Plotting facilities
- Inventory and Defects
- Condition and Treatments
- Seamless "in context" interface

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