

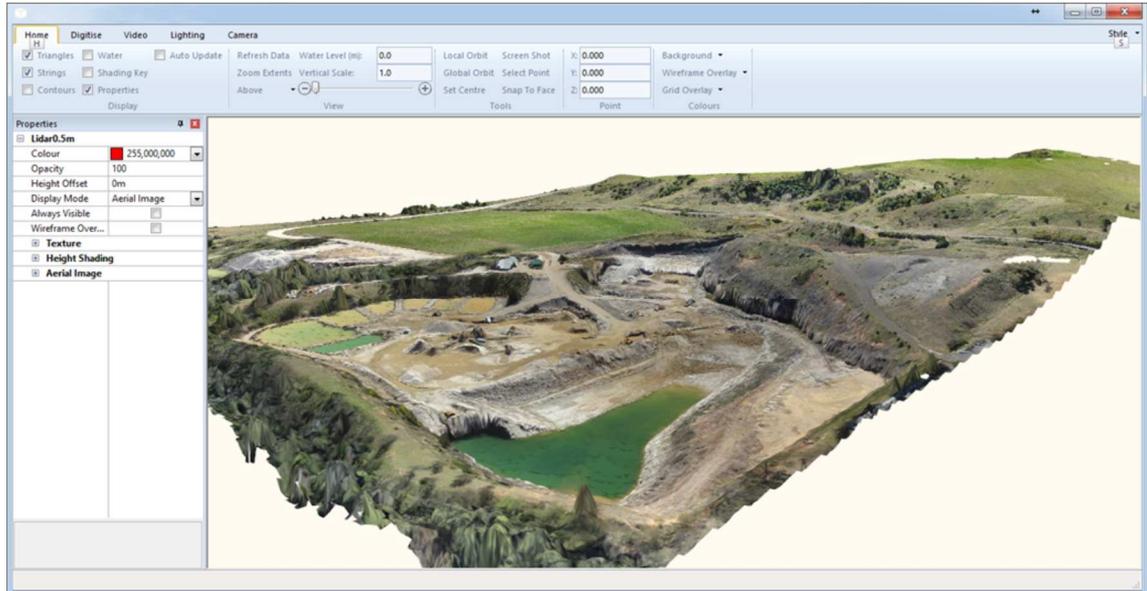
n4ce Designer has applications for bore hole logging, earthworks & mining design, geological modelling, roads design and railways templates. Specialist tools are provided for handling and editing LIDAR data in its native grid format, which is ideal for large scale data modelling. These grid models are very efficient at storing mass data.

Additional tools allow the comparison of XYZ points for tolerance checking, generating grids from building footprints and polygons and balancing volumes from feature strings.



## Principal Features

- Model create
  - Bore holes
  - Perpendicular offset
  - OS Heights
  - Surface from DXF file
  - MX GENIO DTM
  - Import from SDB
- Points
  - Block place
- Feature
  - Design line projection
- Contours
  - Threads single
  - Interface contour
- Sections
  - Tunnel profiles
  - Radial visibility
- Design
  - Building footprints
  - Slopes
  - Grid polygon file
- Compare points
  - number and code
- Dimension
  - interpolate
  - height difference
- Haul road design
- Balancing strings for cut and fill volumes
- Steps generation
- DTM height
  - Factor
  - Surcharge
  - Addition & Subtraction
  - Trend surface
- Rail options and reports
  - Overlaps
  - Templates
  - Cant Stick
  - Parallels and versines
- Lidar grid edits
  - Volumes
  - Sections
  - Smoothing
  - Updates
  - Combining
- Hz and Vt Alignments

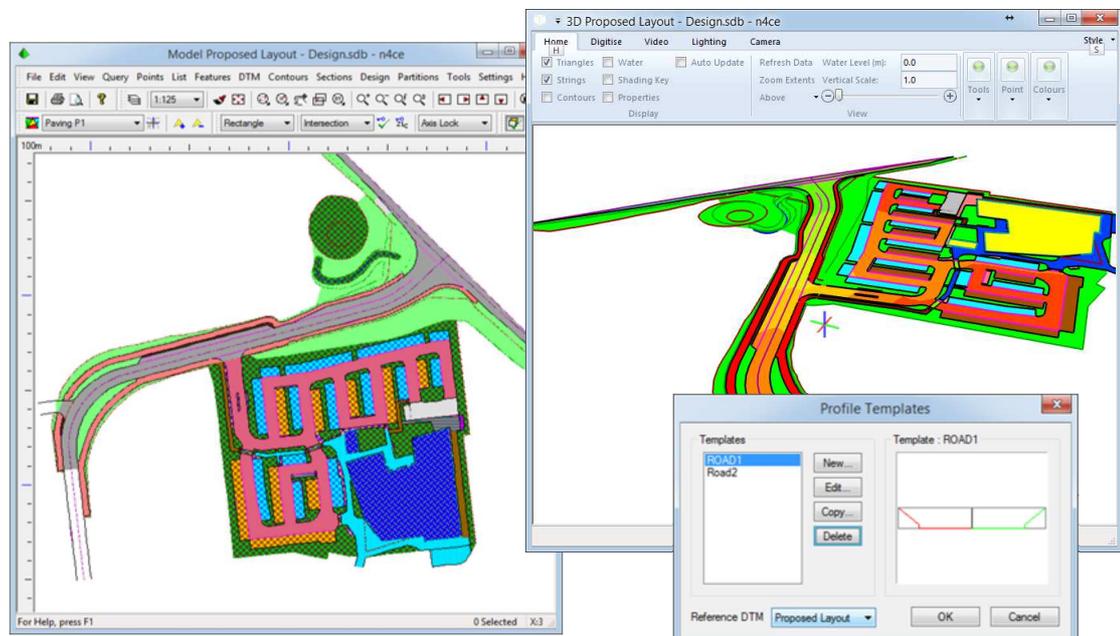


## Profile Strings and Templates

Both n4ce Professional and Designer have an option called **Profiles**. This uses a predefined **Template** that looks like simple cross-sections, that is swept along a 3D reference string, creating parallel features.

Starting from a central reference, Templates can have any number of offsets and grades and include batter intercepts to a DTM. This allows you to complete earthworks design, including roads, ditches and bunds.

In Haul road design a feature centre line is designed taking into account the side slope in a quarry and maximum grade from a reference string. n4ce Designer also has tools for designing horizontal and vertical alignments, which can also be used as a seeding string for templates.

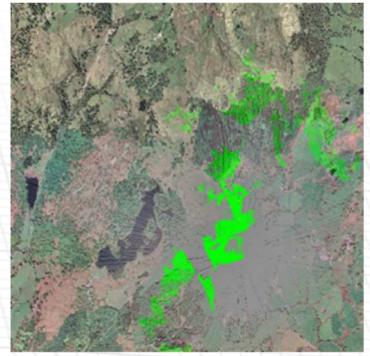


# Visibility Analysis

“Where can I see a particular design from?” and “What can I see from here?” are two questions commonly asked by planners when considering applications from developers.

Using the Visibility analysis tools in Designer, multiple “What if” scenarios can be played out to see how a proposed development impacts its local surroundings.

When combined with LiDAR surfaces, the visual impact can be assessed as far as the data persists. The option allows for multiple parameters such as various eye heights and target heights to be evaluated, so that a full assessment can be conducted both looking into a design and looking out.



# LiDAR Surfaces

Flooding, Road and Rail projects work over large areas, and with modern equipment such as aerial drones generating millions of data points, enormous terrain data sets are being generated all the time. To handle these terrain files, n4ce relies on a special regular grid DTM format used by Arc GIS.

In this mode n4ce generates the required ground models on the fly, so that queries, sections and volumes are computed especially quickly, no matter the size of the area being modelled.

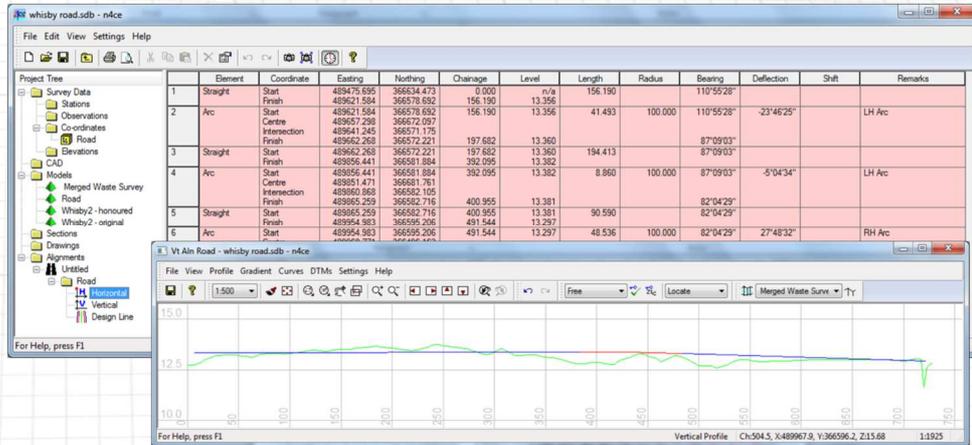


# Alignment Design

Both **Horizontal** and **Vertical** are supported. As with other data types, n4ce provides an abundance of tools, including both graphics and text based editors.

Hz alignments are drawn using CAD tools including straights, arcs and **transitions**. These are then committed to alignments.

Vt alignments are sketched on top of a ground profile. These design elements include gradients, parabolic and circular curves.



# Railway Options

A number of rail options are available with the Designer edition. These take advantage of dimensions attached to survey points that store attributes such as cant, gauge and chainage. Once imported into n4ce, this data can be analysed to process track overlaps, generate the 2<sup>nd</sup> rails and produce reports detailing deviations from design, as well as Hz and Vt versine tables.

This option can be made available with both Lite and Professional editions.

	Code	Number	Easting	Northing	Height	Dimensions
1	LR1	1	456933.606	314102.632	78.753	CHN=1000 GAUGE=1.437 CANT=0.0101
2	LR1	8	456936.788	314109.826	78.894	GAUGE=1.4353 CANT=0.021 CHN=1007.869
3	LR1	14	456940.371	314117.176	79.028	GAUGE=1.4436 CANT=0.0263 CHN=1016.047
4	LR1	21	456943.831	314123.560	79.119	GAUGE=1.4464 CANT=0.0276 CHN=1023.31



Applications in CADD Ltd.  
www.appsincadd.co.uk

Applications in CADD Ltd,  
21 Britannia St, Shepshed,  
Leicestershire, LE12 9AE, UK

Tel: +44 (0) 1509 504501  
Fax: +44 (0) 1509 600079  
e-mail: [enquiries@appsincadd.co.uk](mailto:enquiries@appsincadd.co.uk)