Applications in CADD Ltd

4Site AutoCAD™ Based Survey Data Capture

4Site for AutoCAD removes much of the tedium of surveying and setting out by seamlessly linking Total Stations and GPS into AutoCAD™. **4Site Office** allows downloading, formatting and processing of survey data, whilst **4Site Survey** links directly to your instrument for infield recording of data, turning it into an advanced digitiser.

A **stand alone** solution is available, also using a DWG platform for data storage and display. Tools are available for pure **Survey** and specialist applications for **Rail** and **Hydrographic** surveys. In these specialist applications links are made to external transducers to tie these seamlessly to remote data using long range blue tooth connections. Measured data will appear automatically and graphically in real-time for interrogation. Key to the display of data in *4Site* is the **Code Table**.
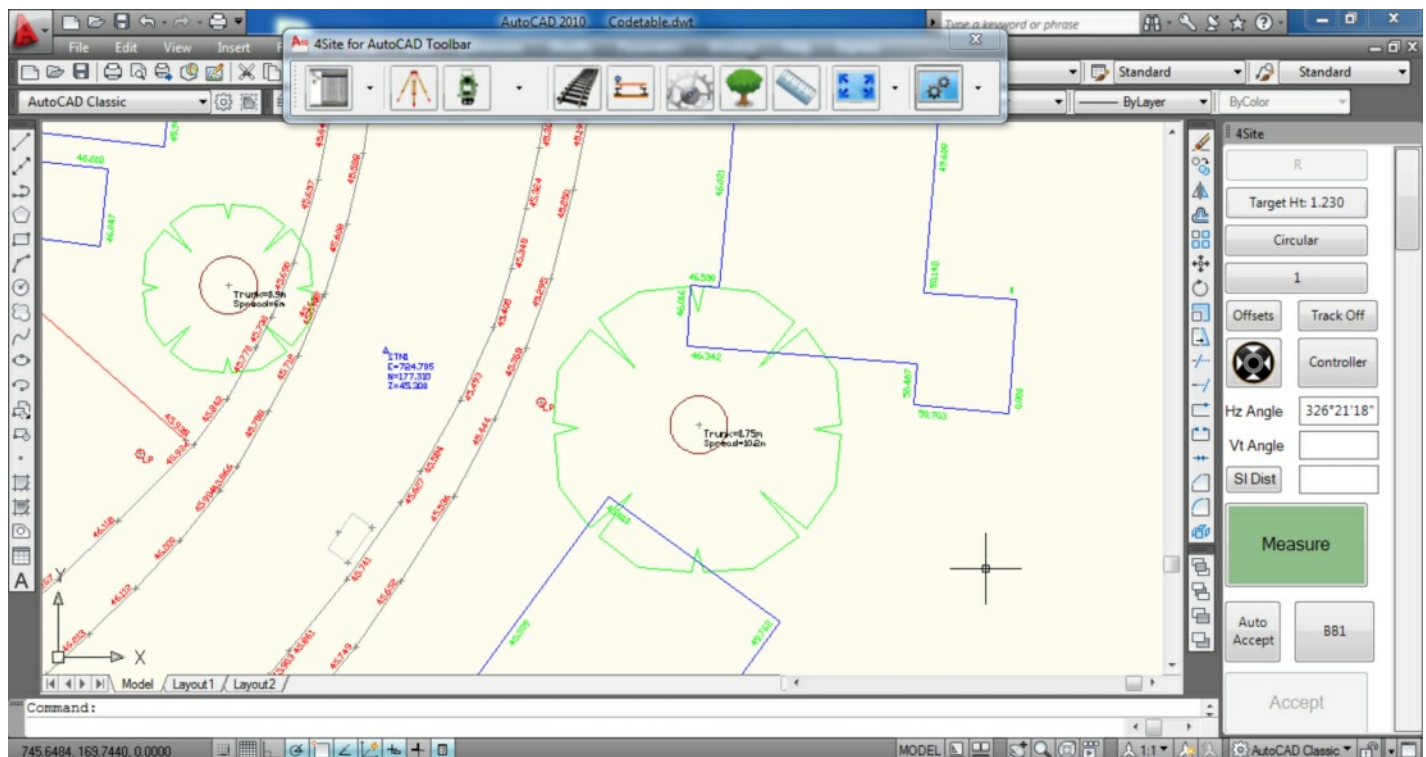
4Site Field Capture and Survey Processing Software for AutoCAD™

4Site Application Toolbar

4Site can be embedded within AutoCAD™ as a plug-in, or stand alone. An icon toolbar will be seen in CAD, resulting in the **Application Toolbar**. This provides additional functionality including Code Table, Settings, Zooming and Regen. The **4Site for AutoCAD Office** toolbar is similar with the omissions for instrument interfaces. .

4Site Application Toolbar

Access to program functionality is provided via this toolbar. From left to right these options are:

1. Display the Project Manager
2. Start a Total Station Setup
3. Survey Measurements or Setout
4. Access to Instrument Controls
5. Start of Rail Survey
6. Cant Gauge Surveys (Blue Tooth)
7. Global Settings
8. CodeTable
9. Drawing Scale
10. Zoom Extents, Zoom Rectangle, Pan (submenu)
11. Regenerate View (submenu)

The *4*Site Code Table

The Code Table translates co-ordinate Values with an associated code, into a survey drawing..

Object types such as Points, Lines, Annotation and Blocks are drawn with user definable style and colour on specified layers.

Combining the various object types together allows for CAD work to be automatically generated as the readings are recognised.

For example a spot level can be displayed as a simple cross with height annotation, whilst a road edge could be drawn as a polyline with annotation aligned to it, taking the line angle for orientation.

A tree could be represented using a scaled block with annotation to describe its height, spread, bole size and type.
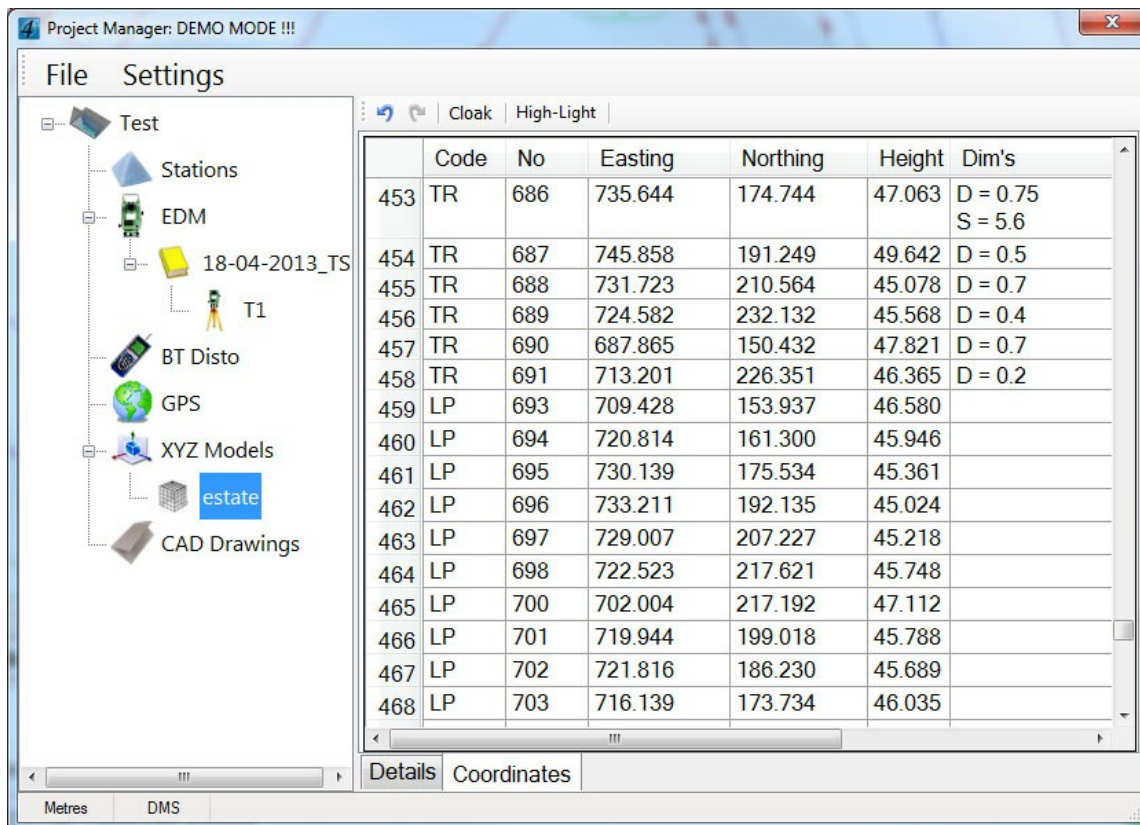
Attribute data can also be collected that may be used in sizing detail, such as the tree spread and trunk size. Text macros allow the display of parametric detail, such as tree sizes and point or station coordinates.
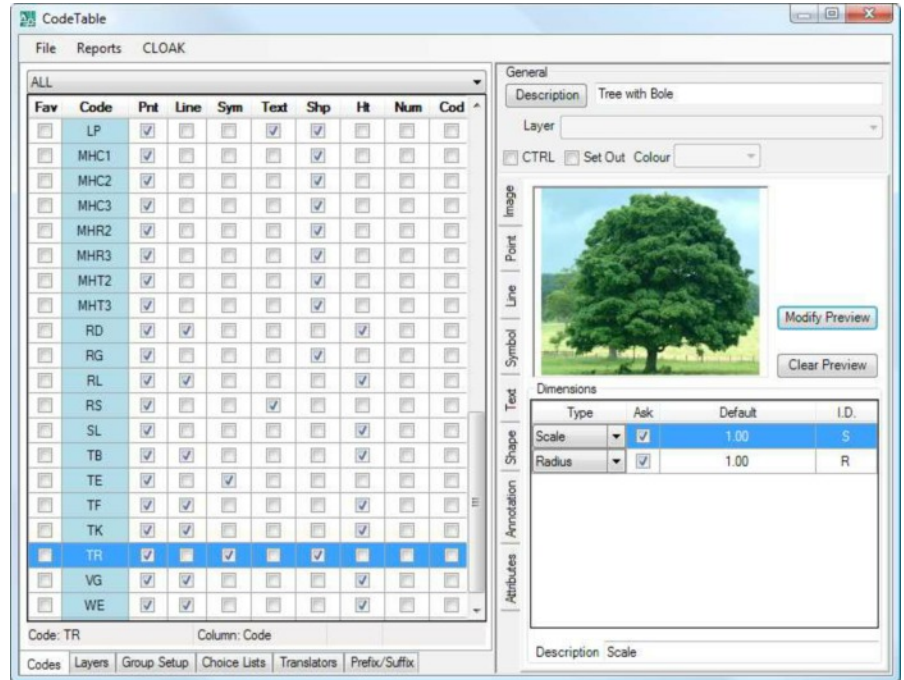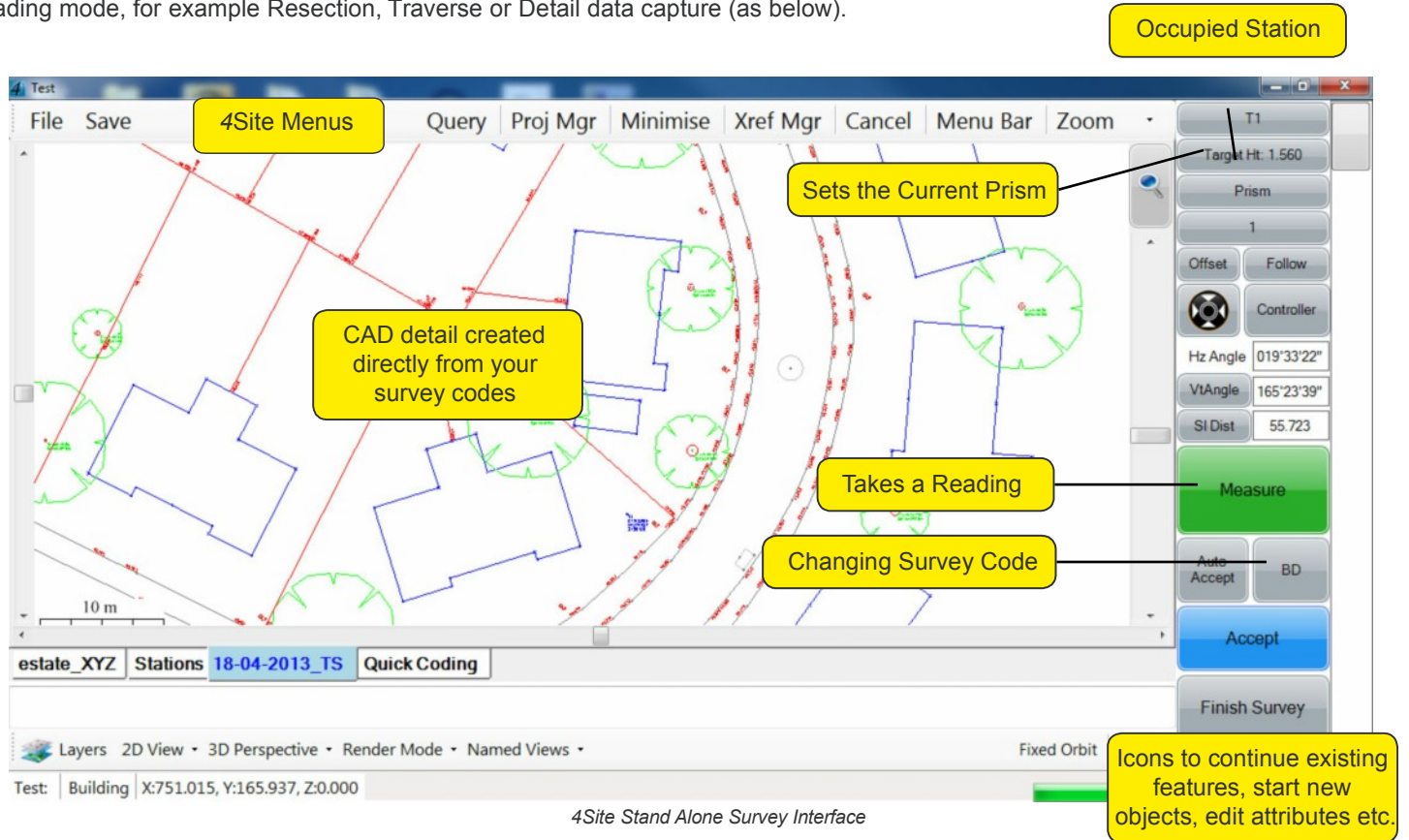
4Site Code Table

The Project Manager

Each AutoCAD™ drawing will have its own self contained project containing any number of Total Station, GPS or Disto folders,off a Project Tree as shown here. Various tabs control exactly what information is currently displayed, allowing data, whereappropriate, to be edited. The example here is displaying readings from setup STNM2.
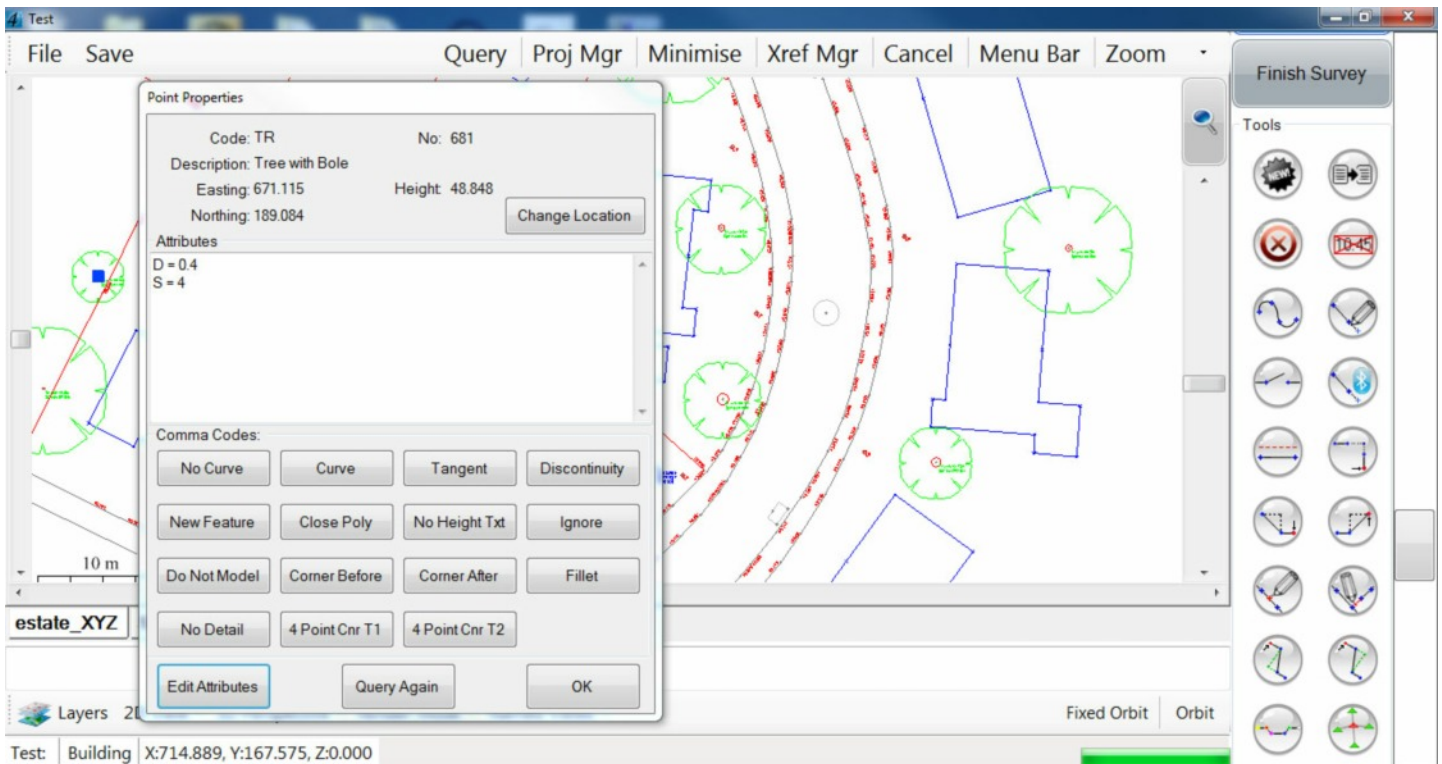
	Code	No	Easting	Northing	Height	Dim's
453	TR	686	735.644	174.744	47.063	D = 0.75 S = 5.6
454	TR	687	745.858	191.249	49.642	D = 0.5
455	TR	688	731.723	210.564	45.078	D = 0.7
456	TR	689	724.582	232.132	45.568	D = 0.4
457	TR	690	687.865	150.432	47.821	D = 0.7
458	TR	691	713.201	226.351	46.365	D = 0.2
459	LP	693	709.428	153.937	46.580	
460	LP	694	720.814	161.300	45.946	
461	LP	695	730.139	175.534	45.361	
462	LP	696	733.211	192.135	45.024	
463	LP	697	729.007	207.227	45.218	
464	LP	698	722.523	217.621	45.748	
465	LP	700	702.004	217.192	47.112	
466	LP	701	719.944	199.018	45.788	
467	LP	702	721.816	186.230	45.689	
468	LP	703	716.139	173.734	46.035	

4Site Project Manager

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4Site Survey - Total Station Interface

This is the view a user will see when collecting data using a Total Station. The screen displays information related to the current reading mode, for example Resection, Traverse or Detail data capture (as below).

Occupied Station

4Site Menus

Sets the Current Prism

CAD detail created directly from your survey codes

Takes a Reading

Changing Survey Code

Icons to continue existing features, start new objects, edit attributes etc.

4Site Stand Alone Survey Interface

Query Attributes

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System & User Settings

The screens shown below are used in **4Site Survey** and configure the instrument communications and other system defaults.
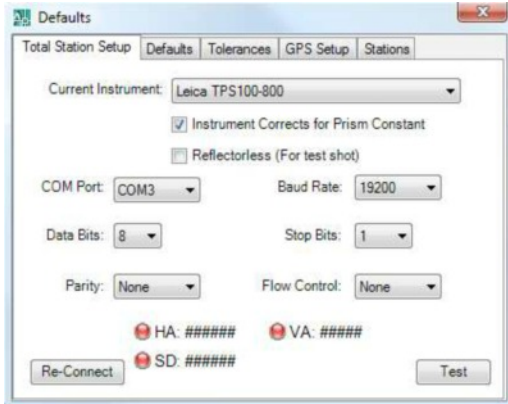
Once set these defaults are stored in the current DWG, they can be saved as an AutoCAD™ Template, which will be available for any new CAD drawing.
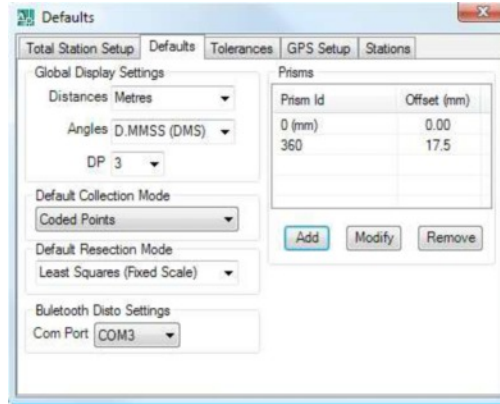

Tablet PC Interface

Automatic Tracking - Hydrographic Survey

Current Instrument and Communication Settings

Defaults for Region, Prism and Methods of Working

Survey Functionality:
- Reduction, Resection and Traverse Adjustment
- CAD Detail from Readings using the CodeTable:
  - Points
  - Lines
  - Polylines & Splines
    - Arcs & Circles
    - Annotation
    - Blocks
- CAD Detail with:
  - User defined Layers
  - Automatic Annotation
  - Style and Size definitions

Import/Export:
- From/To:
  - Excel CSV – (I/O)
  - AiC EXP – (I/O)
  - Leica GSI – (I/O)
  - Sokkia SDR - (I)
  - Trimble DC – (I)

Setting Out:
- Any location in CAD
- 2D/3D Polylines
- Robotic Instruments turn to correct bearing

Simple Instrument Control:
- IR/RL Switching
- Prism Control
- Laser Pointer On/Off
- Tracking On/Off
- EDM Measurement Mode

Advanced Robotic Control:
- ATR On/Off
- Locking On/Off
- Prism Search Window
- Full Power Search
- Flip Scope
- Servo Control

User Input

4Site Survey is intended for use infield with small rugged tablet PC's. Key to making this work efficiently is the user interface. Care has been taken to make buttons and Icons large for easy interaction.

The inbuilt pop-up keyboard is not always suitable for inputting survey data quickly without error. Two new screen keyboards have been provided to help with this, one numeric the the other alphanumeric. When you select an input field the appropriate keyboard will appear.

Full Alphanumeric On-Screen Keyboard