



CADD and AutoCADD

CADD

Tonkin & Taylor is a multi-disciplinary consultancy that provides opportunities for civil technicians and engineers to be involved with a broad range of projects and use a range of software packages. Essential to the design process at T&T is the computer aided draughting and design (CADD).

AutoCAD

The core drawing design package used for construction drawings and figures is AutoCAD (2006). AutoCAD has been used at T&T for over 20 years and has been thoroughly customised to simplify its use and ensure that all users within the company use the same setup. While many new employees are already conversant with AutoCAD, additional training and ongoing support is readily available.

CADD draughting standards have been implemented to ensure that drawings produced meet the required standards.

- Design Software
 - CADD designers are involved in a wide range of projects from initial concepts through to final drawing production using specialised design software. Users are able to benefit from the extensive experience of other designers with ongoing training and mentoring.
- Land Development Desktop (LDD)
 - LDD has been in use at T&T for over seven years and is one of the main software packages used for the design of major earthworks projects, which includes landfills, quarries and subdivisions

- Surveys of projects are able to be readily incorporated into LDD and similarly designs created are able to be transferred to the client's surveyor for project setout
- LDD is used extensively for creation of digital terrain models which allows us to undertake volume calculations for earthworks planning and easily create sections and contour plans for use in design drawing presentation
- LDD is used for project visualisations, producing rendered images which can be incorporated into photomontages
- The inclusion of AutoCAD Map allows us to undertake survey co-ordinate transformations which, with the current changes occurring in New Zealand, provides a rapid means of transferring a drawing from one co-ordinate system or datum to another.
- 12D Model (12D)
 - 12D has been in use at T&T for over nine years and is the principal design software for roading design, pipe network modelling (sanitary and wastewater), river and canal modelling and dam design
 - A large number of survey companies are now using 12D and we are able to easily access project surveys to be incorporated into design. Designs created are able to be transferred back to the client's surveyor for project setout. A survey module allows us to undertake survey co-ordinate transformations of data provided for a project that has been surveyed in a different co-ordinate system or to a different datum

12D is used extensively for creation of digital terrain models which allows us to undertake volume calculations for planning and easily create sections and contour plans for use in design drawing presentation.

- Geographical Information Software (GIS)
 - Accompanying CADD design at T&T, GIS is used extensively for planning maps including hazard mapping and geological maps. Using industry standard software allows data sets to be created for the client's own GIS system.
- Arcview/Arcmap
 - Fully featured GIS package which is used for visualising, managing, creating and analysing geographic data.
 - 3D Analyst is used for terrain modelling and visualisation.
- Autocad Map
 - Integral to LDD, map is used for survey co-ordinate transformations, GIS data preparation and transfer and for the inclusion of georeferenced aerial photography and drawings.