

# TERRATOOLS®

## Proven technology for advanced geospatial information visualization



Pittsburgh database  
Forbes and Craig



San Diego database  
Marina Area



Philadelphia database  
Center City



Bathymetry database  
NIMA DNC



Queensland database  
Brisbane, Australia

No longer is synthetic environment construction a slow, expensive, labor-intensive process requiring highly-skilled technicians and long time frames. **TerraTools'** automated utilization of cartographic data and easy-to-understand user interface allows database users to rapidly construct complex geospecific virtual worlds from a wide range of cartographic data sources.

- **TerraTools** can utilize a wide variety of **standard cartographic data formats**, automatically translating input 2D data into 3D models using data attributes and geometry. The **ITIN** (Integrated Triangulated Irregular Network) algorithm seamlessly integrates feature and elevation data to produce the most efficient and accurate terrain representation possible within the specified polygon budget and has been judged the best available in independent evaluations.

- **TerraTools** communicates with the operator through its intuitive **flow-graph user interface**, which represents each processing step in the database construction process as a node and each intermediate file as a link. Flow-graphs can be constructed automatically using **wizards**, which embody typical database construction strategies given the user's input data, or from **templates** of standard procedures. Flow-graphs can also be easily modified to produce special-purpose databases. **Context-sensitive on-line help** for each node and operation guides the user through the setup and execution tasks.

- **Intermediate results** at each node can be easily examined by the operator. If an input dataset is updated, only the nodes involving that data need to be re-run. This **incremental database construction and update** capability greatly reduces overall project time and cost.

- A complete set of **diagnostics** are available to characterize the finished database in terms of polygon count, feature density, etc. Databases can be output in **standard formats** or in TSG (Tiled Scene Graph) format, which allows the visualization of large databases on machines with limited memory.

- The **accuracy and efficiency** of **TerraTools'** technology is proven in the construction of **geospatial visualizations** representing a wide range of environments, including high-resolution bare-earth models with natural features and vegetation, and urban environments designed for high performance GIS visualization. Scenes from several representative urban databases are shown at left.

## TERRATOOLS CORE FEATURES:

### Feature integration:

- Roads and bridges
- Linear and areal drainage
- Surface Material
- Building models, placed and generated
- Treelines and canopies

### Intelligent feature generalization:

- Maintains feature topology and attribution
- Automatic feature buffering and generation

### Selective fidelity-polygon budget control

### Flexible memory-paged load module sizes

### Texture support:

- Texture import for models and surfaces
- Appearance editor for customization
- Phototexturing using Ortho and Geo-Imagery

### Multiple levels-of-detail (LOD) construction

### User assistance:

- OmniWizard guides data import and processing
- Templates for standard database processing
- Context-sensitive on-line help
- Extensive database construction tutorials

### Database diagnostics and statistics:

- Terrain surface quality metrics
- Overload and polygon budget reporting
- Automatic localization of compilation errors

### Windows NT/2000/XP and SGI workstations:

- 512 MB recommended
- 350 MB Disk space for complete installation
- OpenGL graphics card - Windows NT/2000/XP
- Multithreaded - multi-processor ready

## TERRATOOLS CUSTOMIZED FEATURE PLUG-INS:

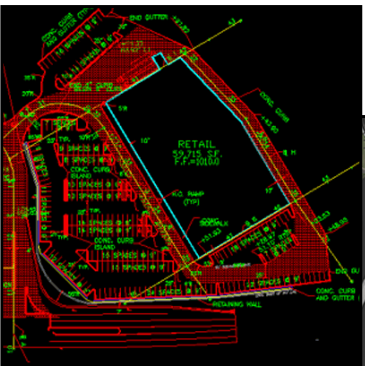
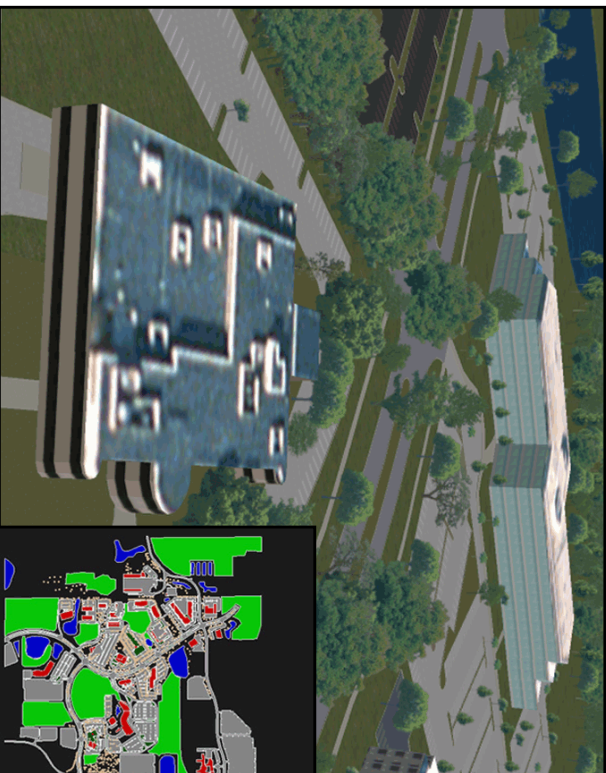
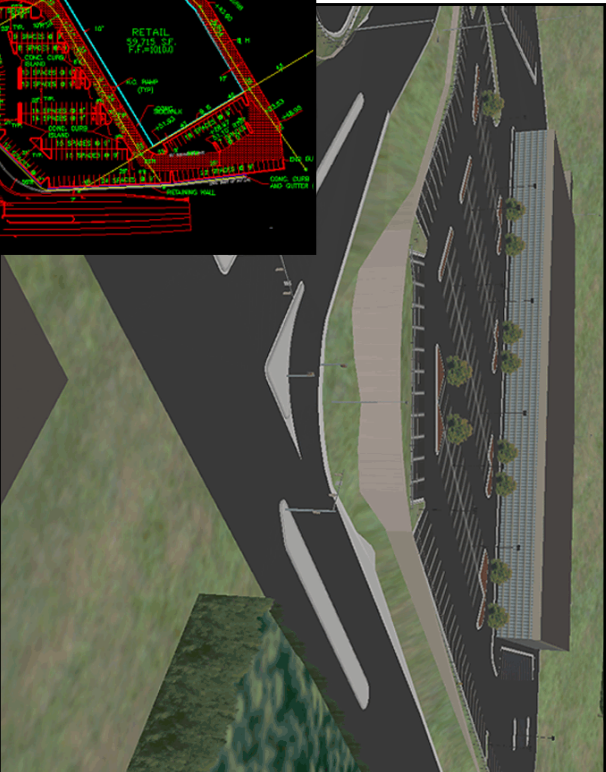
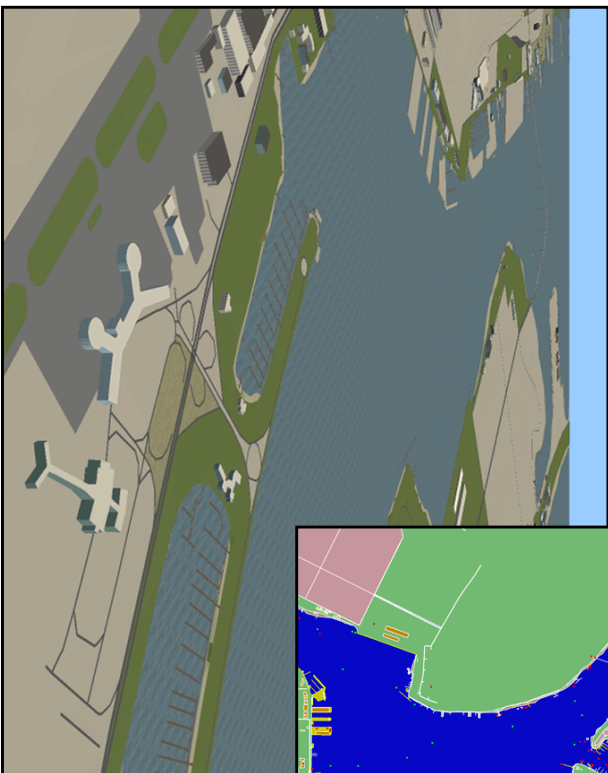
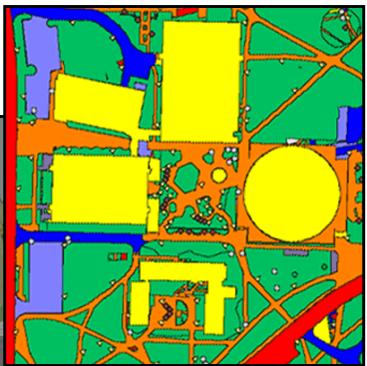
- **NIMA® Import** - All standard formats
- **BAE Systems SO CET SET® Plug-in**
- **GISLink™** - 3D GIS with Interactive Query
- **CTDB Export** - ModSAF, OTBSAF Format 7
- **SEDRIS** - Ingest/Export Version 3.1.X
- **OpenFlight® Export** - 14.2 & 15.4
- **S1000 Export** - S1000 database creation



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**TERRASIM**