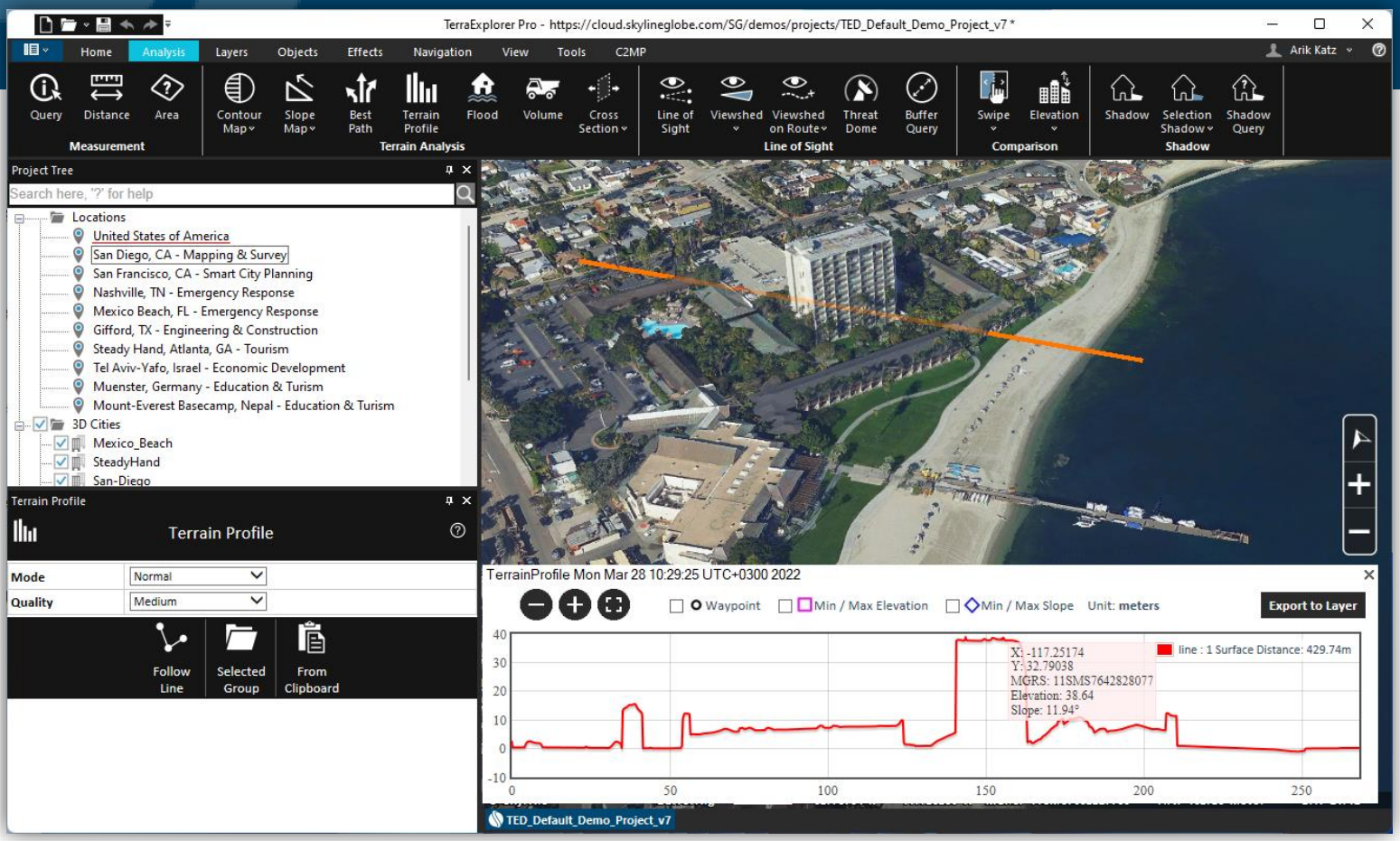
TerraExplorer® for Desktop

Release Notes

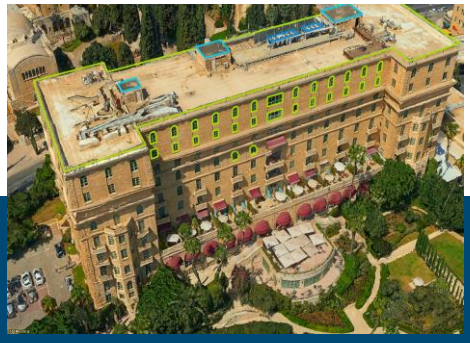
V7.4



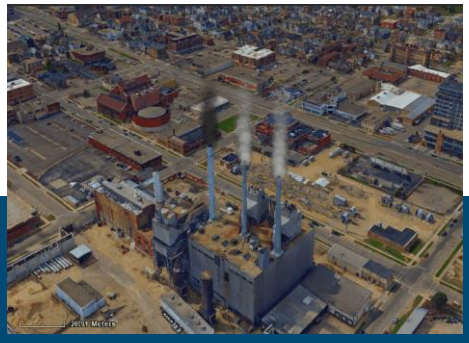
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CONTENTS

- Overview
- New Features
    - All New Photo Inspector Tool
    - Explore the World in Higher Resolution
    - Better support for sub centimeter and vertical 3D models
    - Enhanced Show-Through Option
    - Improved BIM Support
    - AR rendering with Axiom Holographic table or wall
    - Performance improvements to support high detailed XPL models
    - Elevation layer in MPT PNG16 format
    - Integrating the new open3DML v2 format
    - Improved Swipe Layers Tool
    - Publishing to TerraExplorer Mobile
    - Security improvements, Bug Fixes and Stability
- Hardware and software Requirements



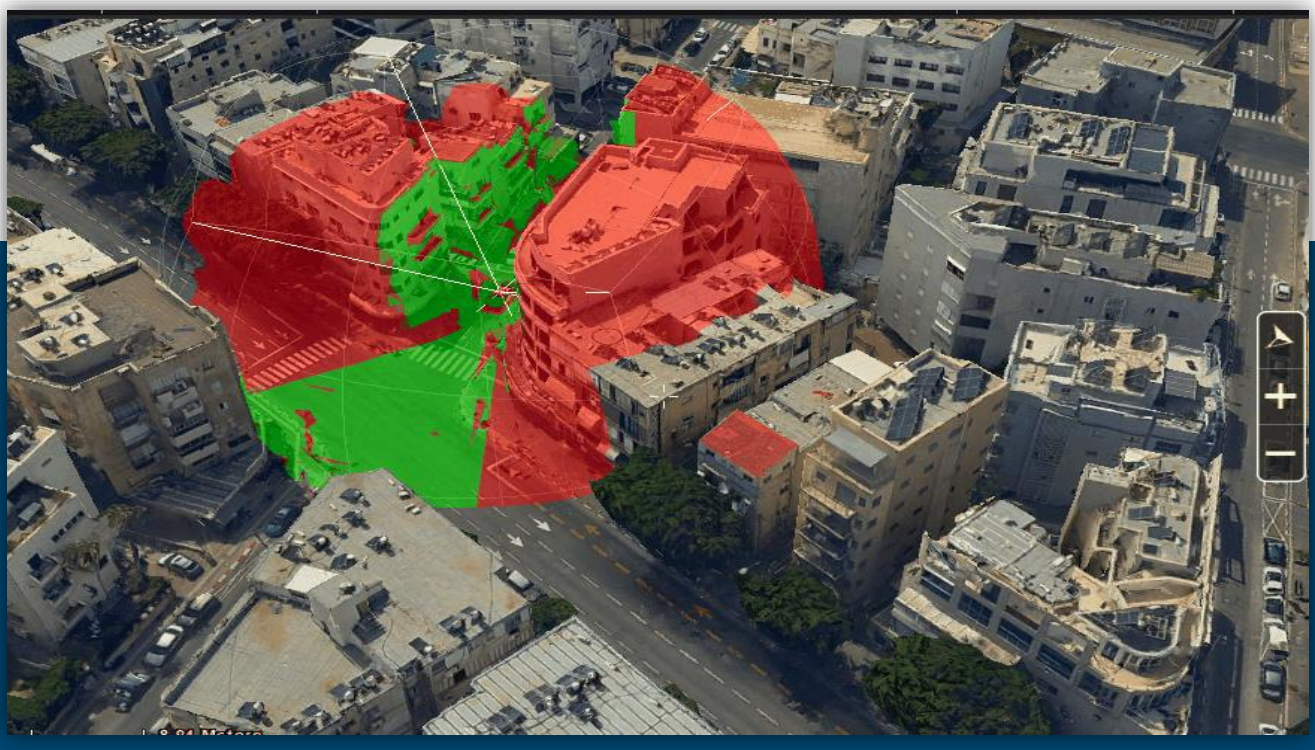




OVERVIEW

TerraExplorer for Desktop is a cutting-edge 3D GIS desktop viewer and creator that provides powerful tools and a high-resolution 3D environment in which to view, query, analyze and present geospatial data. With TerraExplorer's robust and extensive capabilities, realistic 3D visualizations can be created by overlaying the terrain with unlimited data layers, 3D models, virtual objects and more.

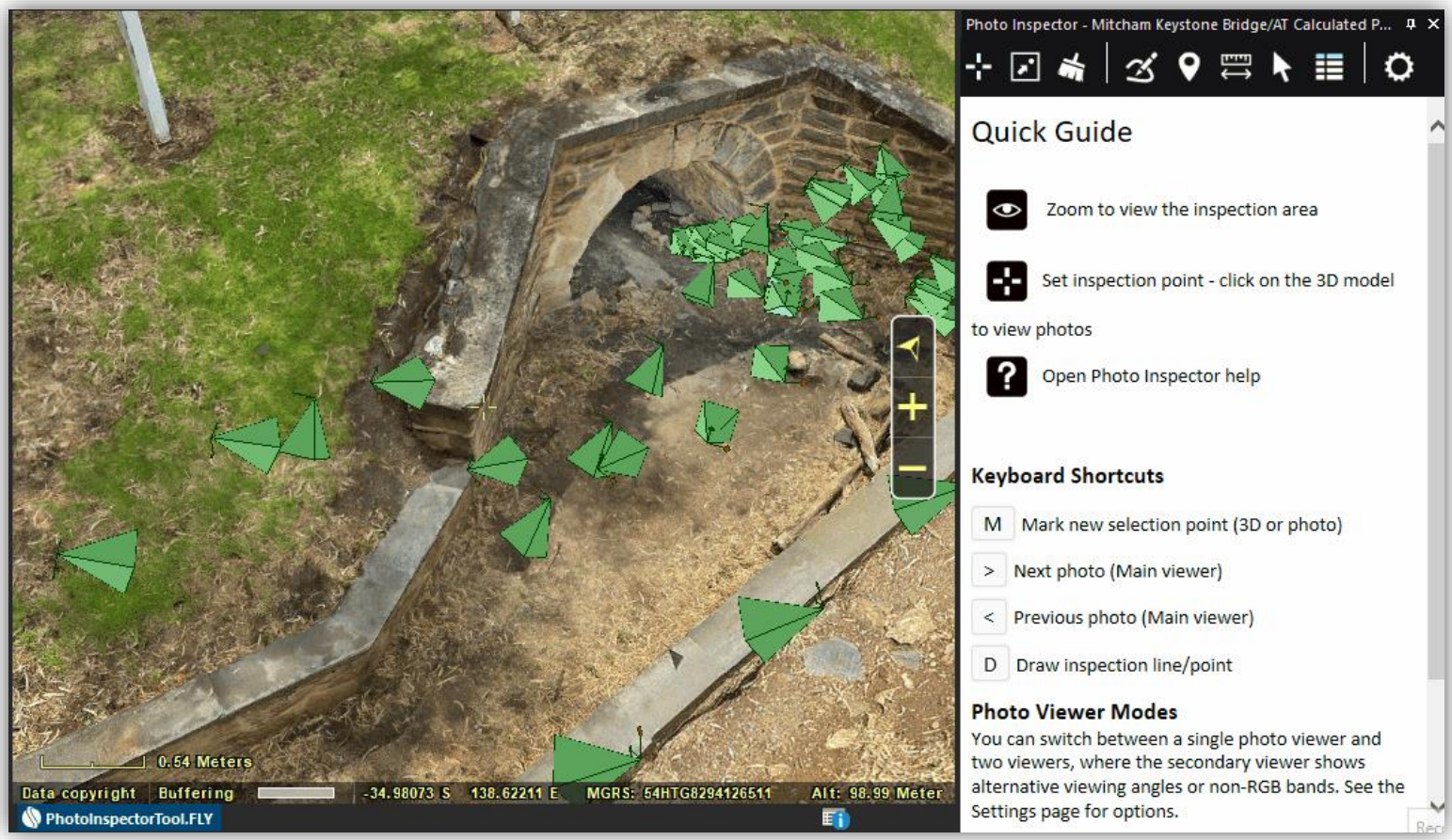
- TerraExplorer supports a wide range of formats including WFS/WFS-T, DAE, 3DS, X, FLT, WMS/WMTS, FBX, Tiff, JPEG, MrSID, ECW, IMG Shapefile, KML/KMZ, SQLite and more!
- Complete set of powerful tools for all forms of 3D World analysis to increase understanding and improve decision making.
- Versatile and configurable drawing tools and vibrant visual effects bring to life your 3D visualization.
- Robust feature layer editing and powerful capabilities for precise adjustments and editing of objects, Advanced objects for modifying terrain and mesh.
- Rich application programming interface (API) allows you to easily develop powerful, customized 3D desktop, Web, and mobile applications or integrate TerraExplorer capabilities in OEM applications.



NEW FEATURES IN V7. 4

All New Photo Inspector Tool

The Photo Inspector tool displays the photos used to generate a 3D PhotoMesh model so you can view and inspect any section of your model (tower, bridge, construction site, etc.) together with the source photos used to produce it. Photo Inspector makes it easy to navigate within the model and between the model and its associated photos, providing real world coordinates for each photo pixel, so you can find the best photos for each area of the model. The Photo Inspector also provides a set of drawing and measurement tools to mark areas and locations on the model and generate a detailed report with all inspection details.

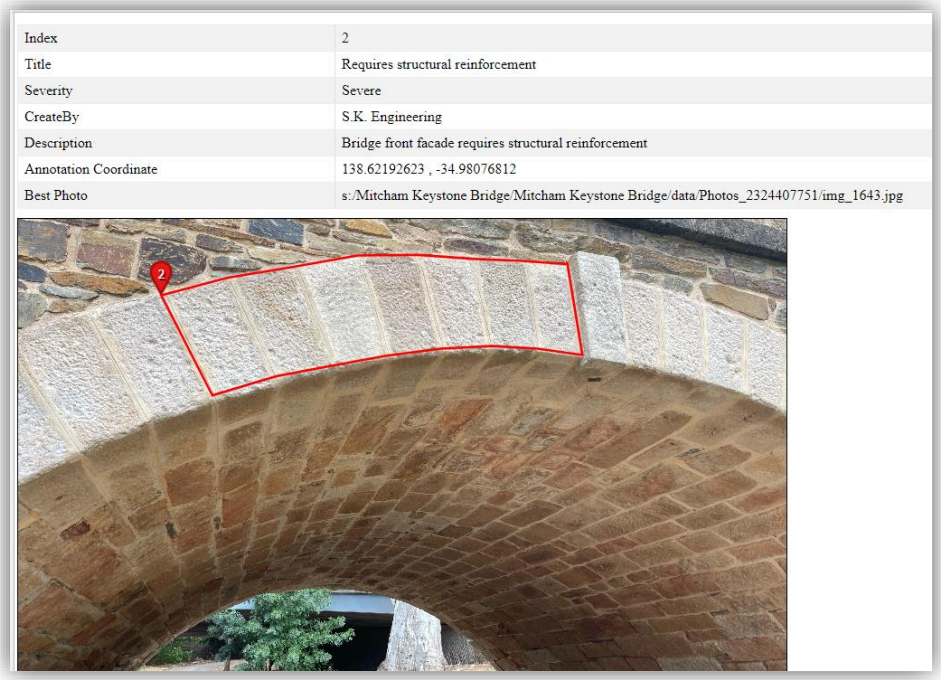


NEW FEATURES IN V7. 4

All New Photo Inspector Tool

TerraExplorer 7.4 features a complete overhaul of this tool that includes a wide array of new, powerful capabilities:

- Single click to mark your inspection area and view.
- Photo Inspector can read photos published to SkylineGlobe Server or converted to Deep Zoom multi-resolution format.
- New option to split display of photos looking at point of interest between two viewers, with the additional “secondary photo viewer” displaying photos from alternative directions (left, right, and behind) or non-RGB photos.
- Options for marking and measuring areas in your 3D model or on photos were expanded to include inspection points, polylines, and polygons. .
- Generate an advanced HTML or PDF inspection report with information about the project and all inspection markings and measurements, including a list of all inspection markings and an overview snapshot of the 3D model with the inspection annotations. Each of the inspection markings in the index links to a page with attribute information and a photo viewer showing the area of the model with the inspection marking.



Index	2
Title	Requires structural reinforcement
Severity	Severe
CreateBy	S.K. Engineering
Description	Bridge front facade requires structural reinforcement
Annotation Coordinate	138.62192623 , -34.98076812
Best Photo	s:/Mitcham Keystone Bridge/Mitcham Keystone Bridge/data/Photos_2324407751/img_1643.jpg

NEW FEATURES IN V7. 4

Explore the World in Higher Resolution

TerraExplorer for Desktop 7.4 improves the display quality of your high-resolution models and terrain:

- **3D mesh quality:** Higher 3D mesh layer render quality even when zoomed out.
- **4K render quality:** TerraExplorer features a new Ultra High Definition (UHD) 4K quality mode, offering true 3840x2160 pixels render resolution. Note that this setting is only applied if the Windows scale is set to 100% (Windows Settings > System >Display).

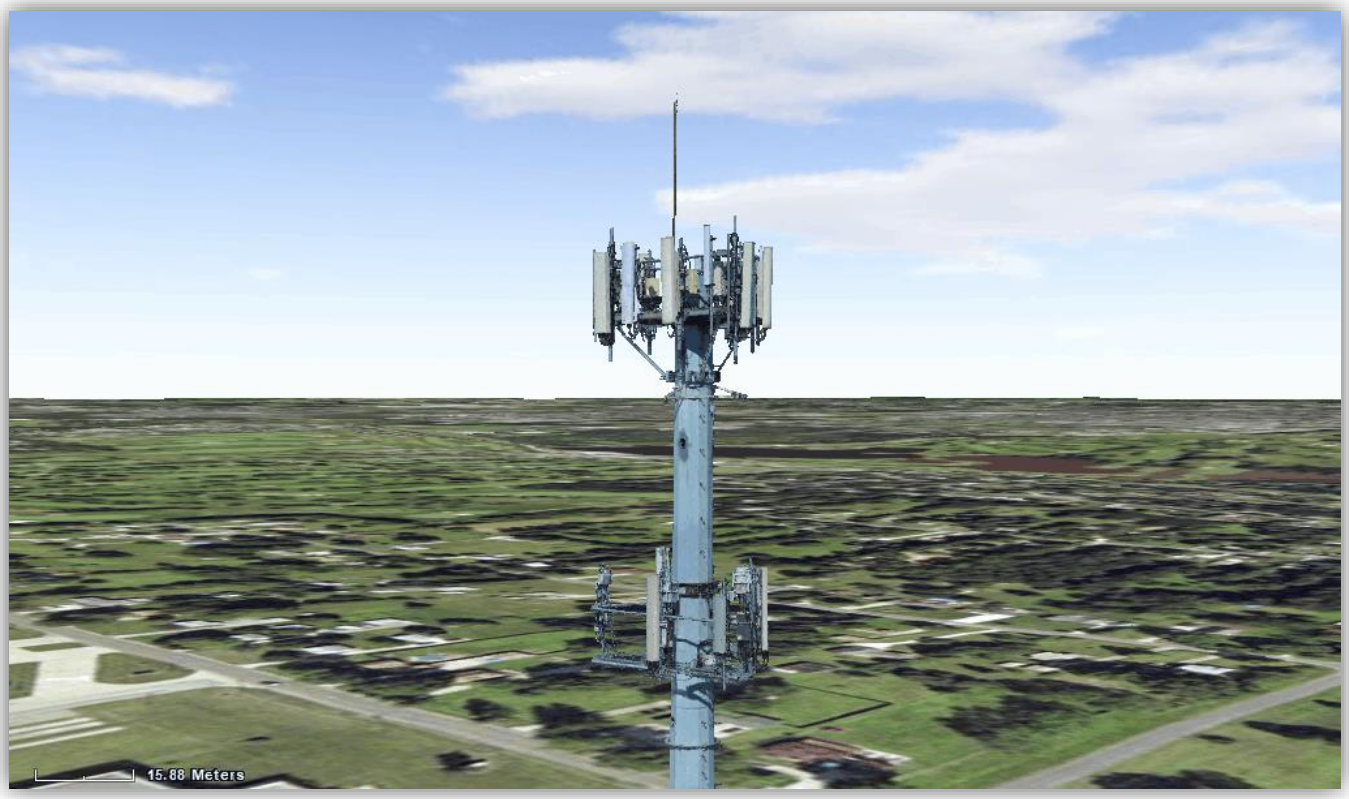


NEW FEATURES IN V7. 4

Better Support for Sub-Centimeter and Vertical 3D Models

TerraExplorer for Desktop 7.4 features set of navigation and display improvements to support high-resolution, 3D models, close range collections and vertical models such as cellular towers, antennas, bridges and more..

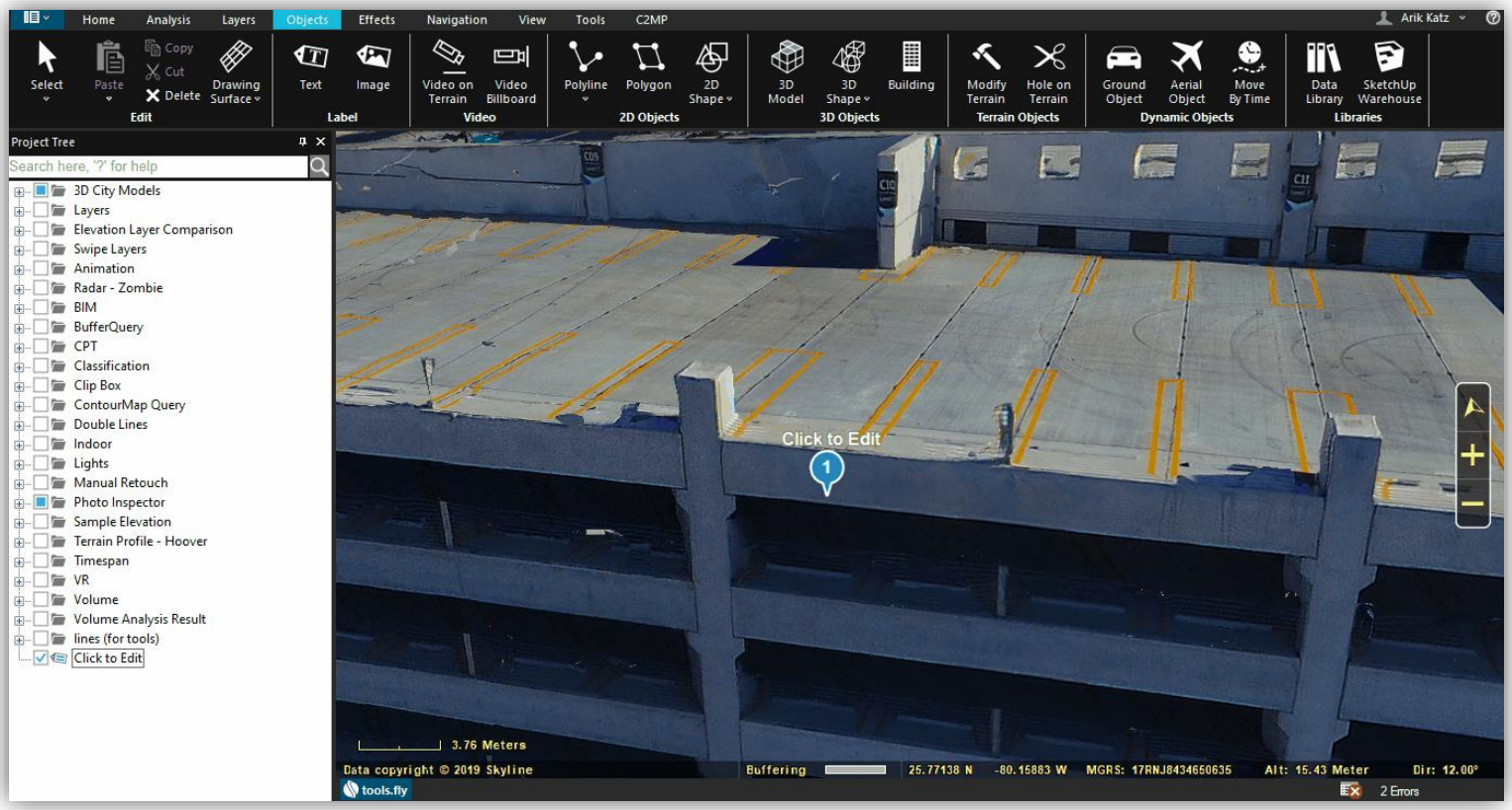
- **View models from close range**: TerraExplorer 7.4's advanced render mechanisms allow 3D models to be viewed from a distance of mere centimeters, while buildings and other elements are still visible on the horizon.
- **Navigation improvements**: Navigate around the tops of towers and antennas without losing your focus on the model. You can easily move up and down along your model using the mouse wheel button while holding down the CTRL key.



NEW FEATURES IN V7. 4

Enhanced Show-Through Option

> The Maximum Show-Through Distance enables objects to show through terrain, mesh layers, or models hiding them. This option is now available for labels, in addition to polygons, polylines, 2D shapes, 3D shapes. Functionality has also been enhanced to enable selection, editing, and snapping of objects showing through terrain, mesh or objects. These new capabilities allows you to view, select and edit labels and objects attached to walls and other 3D elements.



NEW FEATURES IN V7. 4

Improved BIM Support

Building Information Modeling (BIM) layers store the geographic location and attribute data of models. When these files are imported into TerraExplorer for Desktop, they are automatically converted to high-resolution, textured, 3D mesh layer (3DML) that have been compressed and stream-optimized to accelerate loading speed and efficiently handle memory. TerraExplorer 7.4 offers enhanced support for BIM layers including the following:

- An update to the latest IFC importer library that extends TE's supported schema to include IFC 4, IFC 4x1, IFC 4x2, and IFC 4x3 (rc1,rc2), in addition to previously supported IFC 2x3.
- Drag and drop support expanded to include FBX/IFC models
- FBX – new option allows you to import FBX BIM models without the line elements reducing model complexity and improve scene rendering



NEW FEATURES IN V7. 4

AR Rendering with Axiom Holographic Table or Wall

TerraExplorer 7.4 features a new augmented reality rendering mode, developed in conjunction with Axiom Holographics. Using either a full-sized Axiom Holographics Business Table or a Hologram Wall – both of which are supported in TerraExplorer – multiple people can enter and walk through full-sized TerraExplorer models, cities or countries.
TerraExplorer supports Axiom Holographics' multi-user hologram technology, which allows two users in different places in relation to the hologram table (e.g., one at the front of the table and the other at the back) to each have distinct views of the hologram. Each primary user can have up to two additional secondary users (on the same side of the table as the primary user) for a total of six team members simultaneously viewing your terrain, mesh, objects, layers and BIM data. Users can use the Axiom Holographics hand controls to navigate freely, activate presentations, measure the model, select and move objects and more.

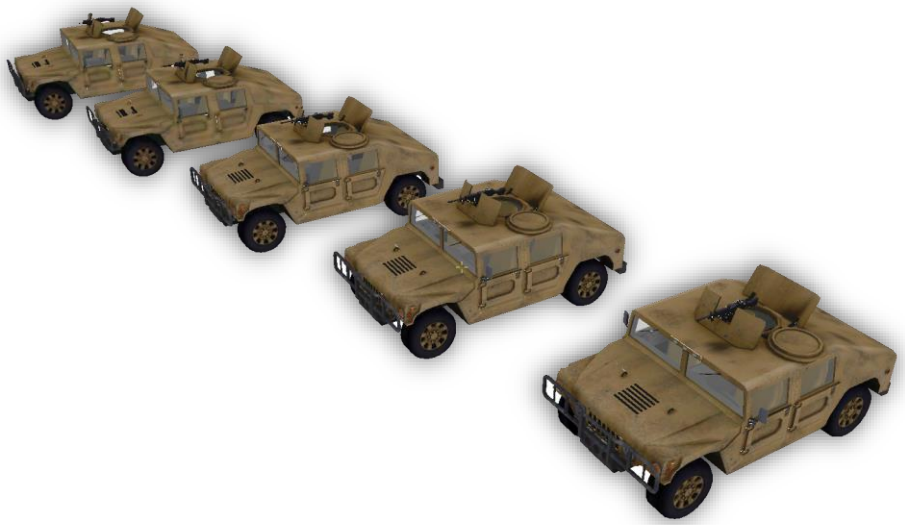
To activate the holographic table mode, contact Axiom Holographics for a full deployment kit.



NEW FEATURES IN V7. 4

Performance Improvements to Support Highly-Detailed XPL Models

The Convert Models to XPL tool converts 3D model files to the Skyline XPL2 file format, creating a set of XPL files where each file contains data for one Level of Detail (LOD). When displaying an XPL model, TerraExplorer dynamically selects and displays the best LOD file based on the viewer position in relation to the object. When downloaded from a web server, each file is also downloaded independently. TerraExplorer 7.4's optimizations to the Convert Models to XPL tool for highly-detailed models maintains a smooth rendering experience even when viewing multiple models.



Elevation Layer in MPT PNG16 Format

TerraExplorer 7.4 offers a new internal format, which dynamically adjusts the precision level according to your layer's elevation range. This format stores the layer's elevation pyramids to a Skyline MPT database in PNG 16-bit format.

NEW FEATURES IN V7. 4

Integrating the New Open3DML v2 Format

Skyline's Open3DML (o3DML) 3D mesh layer format is a new open source format supported by TerraExplorer, that is designed for streaming and rendering massive 3D geospatial content such as terrain surfaces, 3D city models, individual models and BIM. The new Open3DML version 2 format adopts the internal structure and sub-formats of OGC's 3D Tiles standards, thereby enabling o3DML layers to be easily streamed or converted to any 3D viewer that supports the OGC 3D Tiles protocol.



Enhanced Compatibility for 3D Tiles

TerraExplorer 7.4 features an improved 3D Tiles and o3DML reader to support additional flavors and data types, including:

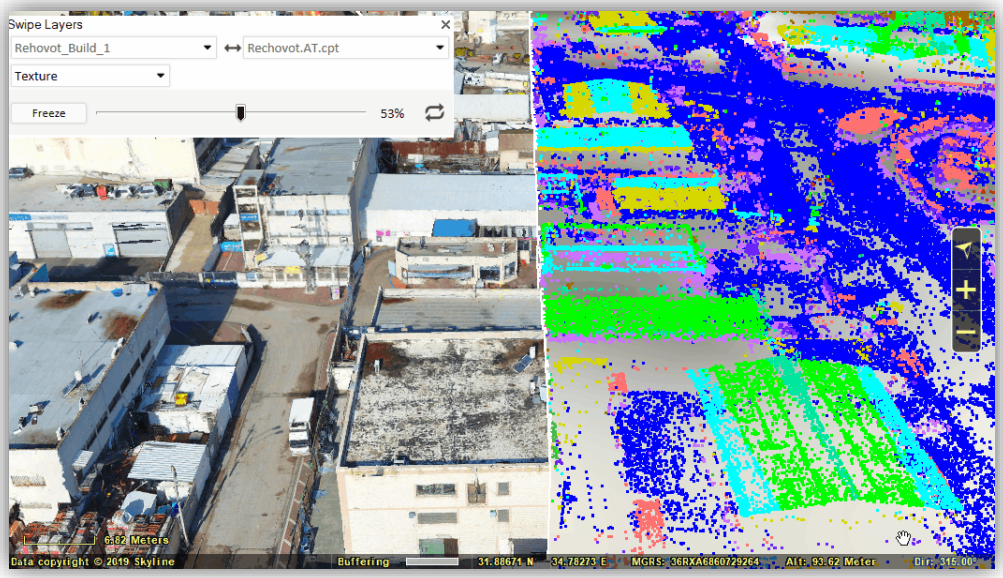
- Better support for BIM models in 3D Tiles format, including texture transparency and performance improvements
- Support for additive ("add") refinement mode. Refinement determines the process by which a lower resolution parent tile renders when its higher resolution children are selected for rendering. In this refinement mode, the children tiles are rendered in addition to the parent tile.

NEW FEATURES IN V7. 4

Improved Swipe Layers Tool

The improved Swipe and Compare Layers tool allows you to detect the changes between any two layers in the same location regardless of their data types: 3D mesh, imagery, point cloud and the base terrain.

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Publishing to TerraExplorer Mobile

TerraExplorer Pro 7.4 offers new online and offline publishing options to the new TerraExplorer for Mobile (version 7.0.1 or higher).

- The Publish to SkylineGlobe Server options generates an online project that can be opened both by TerraExplorer for Desktop and TerraExplorer for Mobile, thereby replacing the more limited “Mobile” project.
- The “Upload Existing Kits to Mobile Device” option has been restored for customers who need to work offline, enabling them to copy the project file and all project layers and resources to an Android device.

Note that these new options are only supported on TerraExplorer for Mobile v7.0.1 or higher..



NEW FEATURES IN V7. 4

Security improvements, Bug Fixes and Stability

This release improves overall stability and performance, and provides the following bug fixes:

- Security:
  - DotNetZip.dll upgrade
  - Fixed "prototype pollution" security vulnerability in ToolsCommonXX.js
- Mesh layers:
  - 3D Tiles with multiple textures per model can now be converted to a single-texture 3DML layer from the SLMeshConverter command line tool. This enables them to display properly when loaded into Esri clients after conversion to SLPK (either from TerraExplorer Pro or on-the-fly when uploaded to SGS).
  - Resolved issue that caused partial and slow loading when using Convert Models to 3DML tool
  - Fixed underground mode display issues
  - Fixed various OSGB import issues
  - Corrected issue causing TerraExplorer to crash upon loading some 3D Tiles
- IFC fixes:
  - Resolved partial import
  - Resolved flickering objects
- Feature layers:
  - Fixed various Postgre issues (failed transactions and more)
  - Fixed crash when copy-pasting layer style
  - Layer's message is now also copy-pasted when copy-pasting layer style
  - Fixed issue that resulted in Microsoft SQL DB showing only first layer
  - Various Esri REST server fixes
- Resolved bug causing import failure of some LAZ files
- Improved speed of slow Viewshed Query operations
- Miscellaneous fixes to collaboration tool
- Fixed modify terrain vertex editing errors
- Fixes for various flavors of DAE/OBJ/GLB

REQUIREMENTS

Operating System	Windows® 8 / 10 / 11 – 64-bit required.
System Memory	2 GB RAM (4 GB or more recommended) For 4K render mode - 4 GB of RAM (8 GB or more recommended).
Video Card	1GB of video memory (2GB or more recommended). Pixel and vertex shader v3.0. For 4K render mode - 2 GB of video memory (4 GB or more recommended).
Processor	4 cores (8 cores recommended).
Additional Software	Microsoft Internet Explorer 11 or higher installed on the machine. .Net Framework 4.6.1 required.

For additional information, check out our TerraExplorer knowledge base

www.skylinesoft.com

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