

# Revolution-X

## User Guide

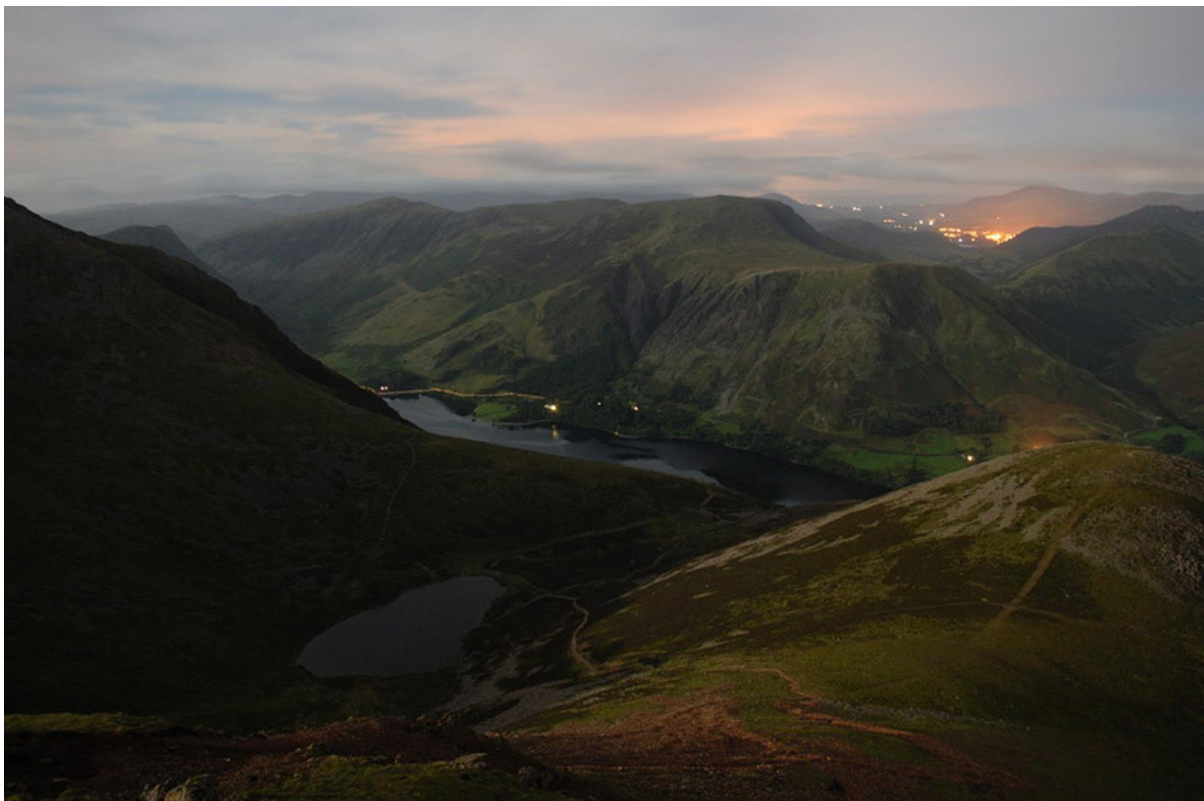
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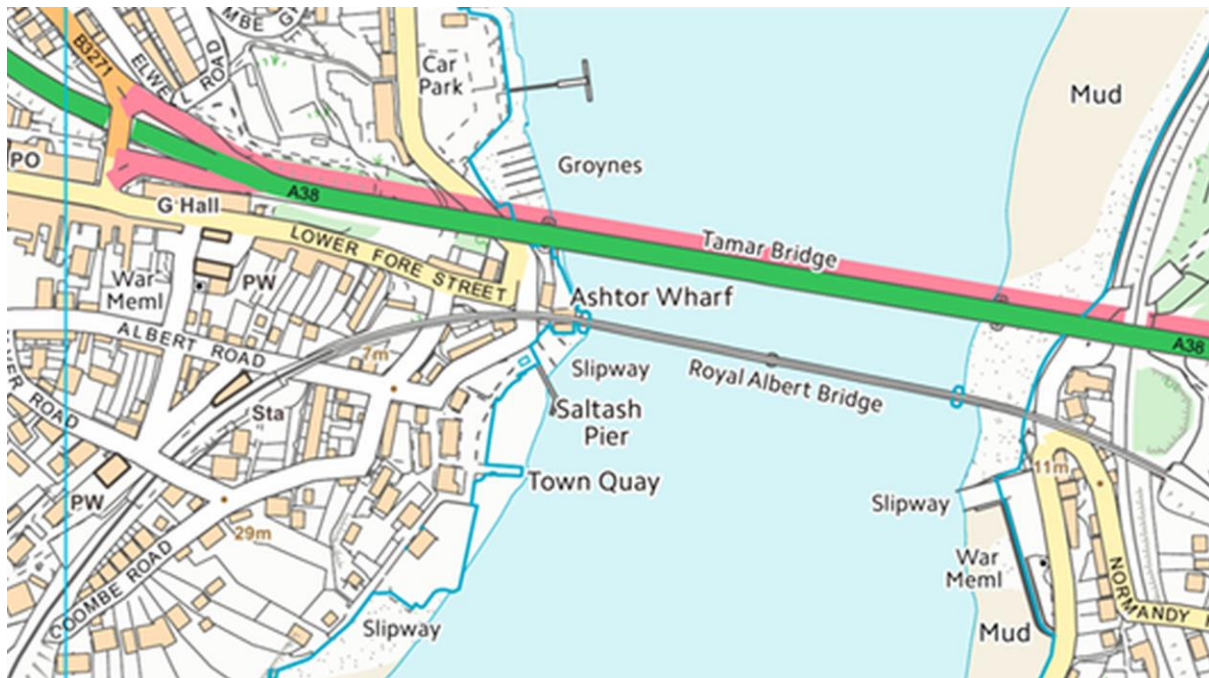
# INTRODUCTION

## Revolution-X

For the first time on such a large scale, Revolution-X employs a totally new design concept to bring together the best of the Photo-Scenery and Landclass types of commercial scenery available for the UK. Revolution-X provides a complete 3D object layer on top of aerial photographic scenery in FSX, placing millions of houses, buildings, churches, trees and hedgerows in their real-world locations throughout England, Scotland and Wales.



Based on the best geographical information systems data ever produced for the UK, the objects in Revolution-X reflect the detail and accuracy of small scale Ordnance Survey maps.



Using ground-breaking new technological processes, the precise co-ordinates of billions of real-world objects have been extracted and re-engineered for injection into FSX as a fully comprehensive Autogen layer. So, for the first time, every village, town and city is fully formed with its real-life streets and estates, and woods and hedgerows trace the edges of real-life fields and the contours of the land.

Revolution-X also includes its own 3D Night Lighting system, built from scratch using a revolutionary new design technique for optimised performance, and which provides breathtaking illumination effects across the whole terrain. For the first time, sequenced traffic lights change from red to amber to green at junctions and roundabouts, and millions of 3D light objects appear, not only along major roads but also mapped to individual houses and buildings, wherever they may be. On the horizon, cities, towns, and villages sparkle into view with hundreds of lamps and streetlights. Along the coast, and deep in the countryside, the outdoor lamps of isolated farm houses and hilltop cottages twinkle through the trees as you pass overhead, all rendered in a variety of shades to reproduce the many different types of fluorescent and electric lights in the real world.

The result is a complete, living, breathing, photo-realistic recreation of the entire United Kingdom, at any time of day or night, and at any altitude from ground level up.

# INSTALLATION

## ***IMPORTANT***

After installing the Revolution-X software please refer to the **CONFIGURATION** section of this manual for information on how to configure your FSX: SE Settings and sort the order of other items in your Scenery Library.

## ***Installing the Download software***

Installation is handled by Steam after purchase of the product. After purchasing the product the files will be downloaded and installation into the Scenery Library will be automatic.

## ***Updates***

Updates to the product will automatically be deployed, downloaded and installed via Steam to all users who own the product.

## ***Technical Support***

To obtain technical support (in English) please visit the Customer Service <http://www.justflight.com/support> pages on the Just Flight website. As a Just Flight customer you can obtain free technical support for any Just Flight or Just Trains product.

For support specifically on the Steam version of the add-on please contact Dovetail Games. <https://dovetailgames.kayako.com/>.

## ***Regular News***

To get the latest news about Just Flight products, sign up for our Newsletter <http://www.justflight.com/newsletter> and regular emails.

# REVOLUTION-X

## How does Revolution-X work – and why is it revolutionary?

Until now there have been two distinct types of commercial scenery product available for the UK: Photo-Scenery and Landclass scenery. Each type employs a different technological approach, and each has its own limitations. To understand these limitations, it is helpful to visualise how FSX pieces the scenery together within the simulation, rather like the layers of an onion.

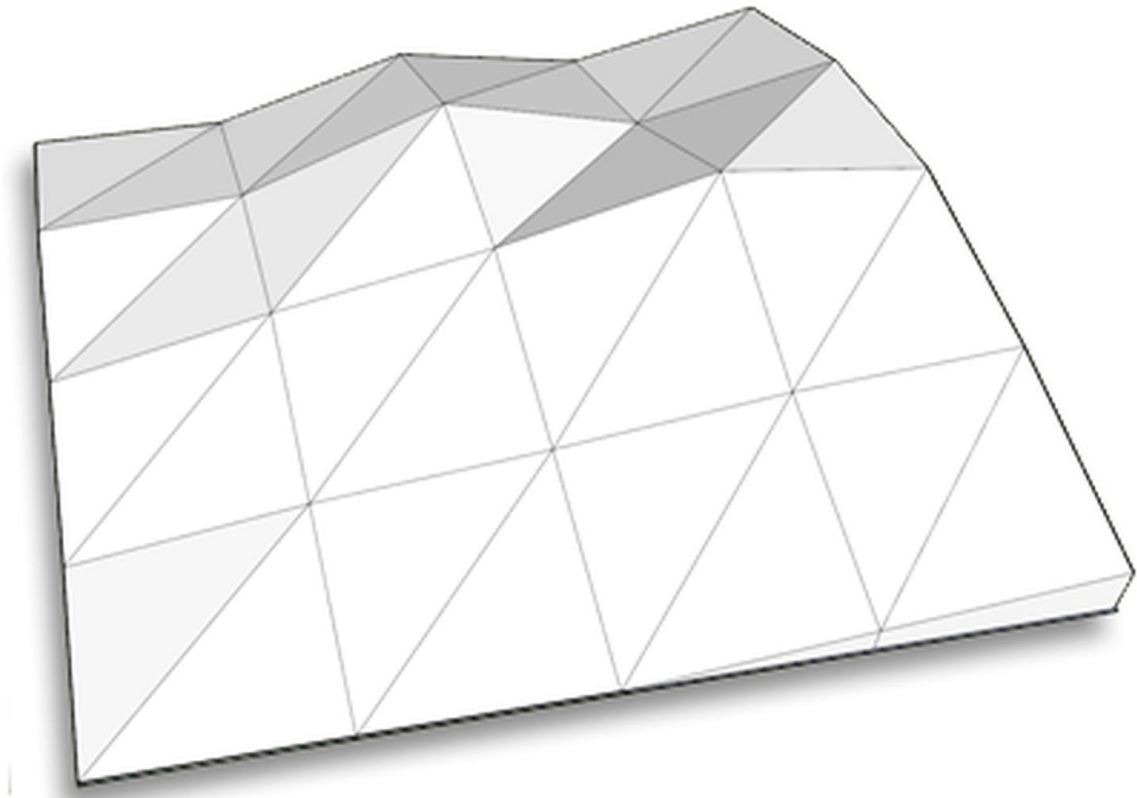




# ***Landclass Scenery***

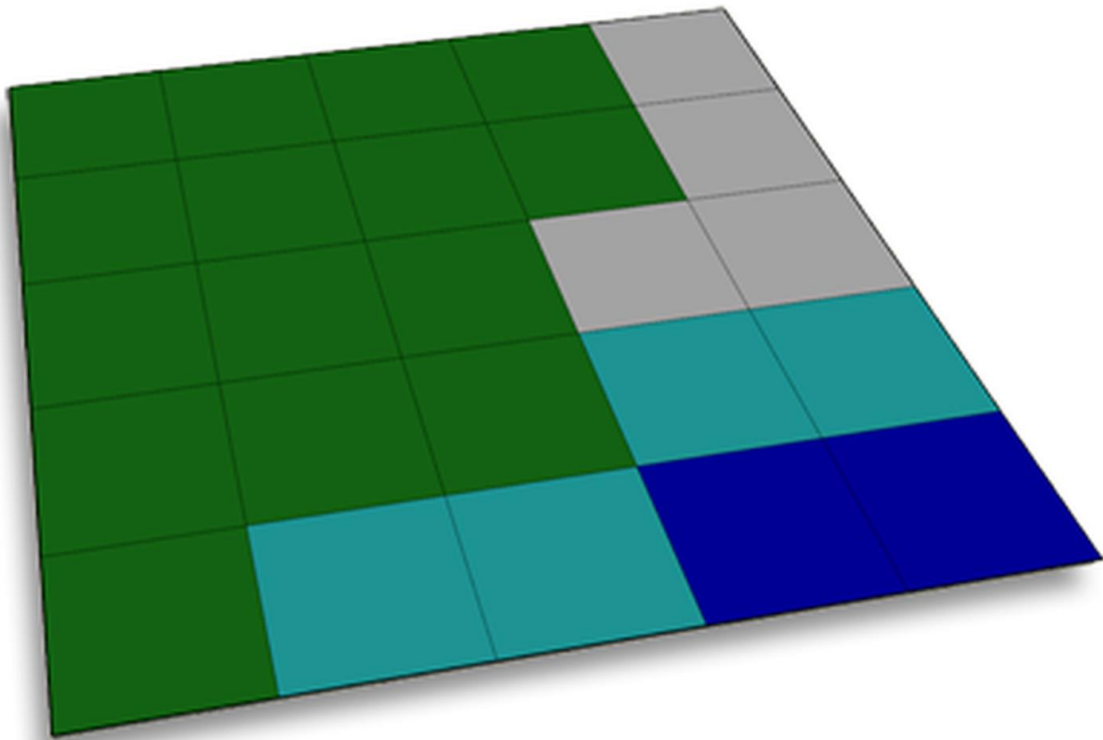
## **1. Terrain mesh**

The first layer is the terrain mesh. This is the digital elevation model which defines the slopes and gradients on the earth's surface.



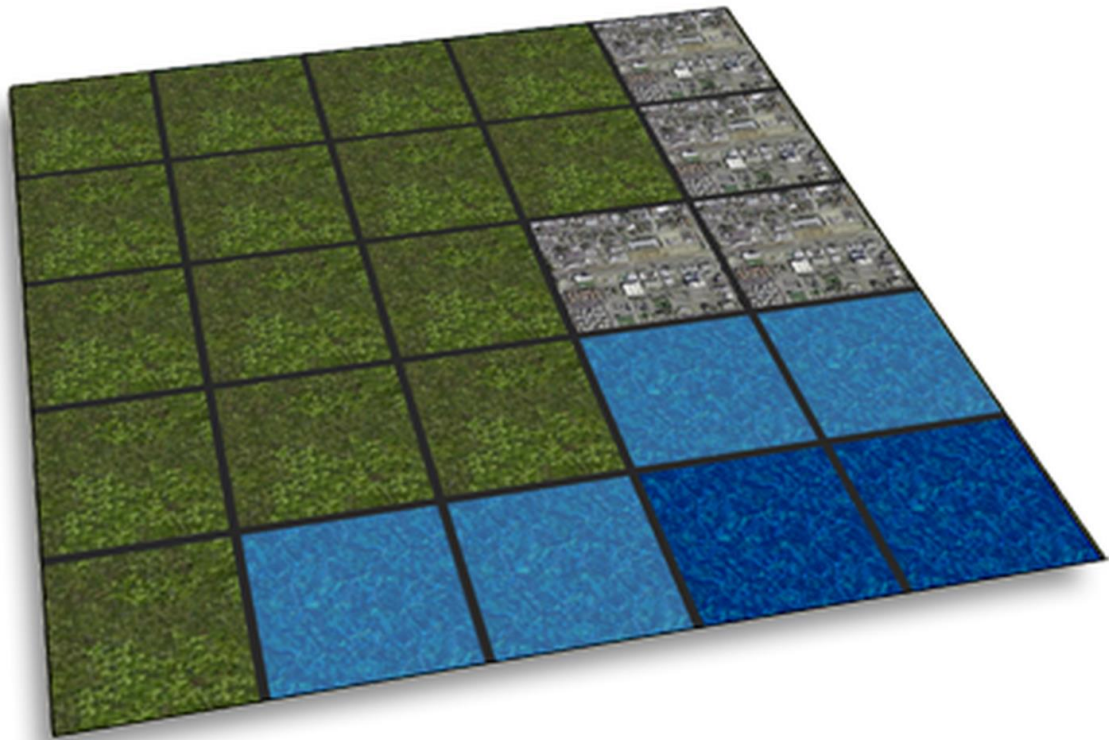
## 2. Landclass and Waterclass

The entire surface of the earth is then divided up into 1.2km grid squares, and each square is assigned a particular 'Landclass' or 'Waterclass'. This is meant to represent the predominant type of terrain for that particular 1.2km square of scenery: forest, urban area, desert, farmland and so on.



### 3. Scenery tiles

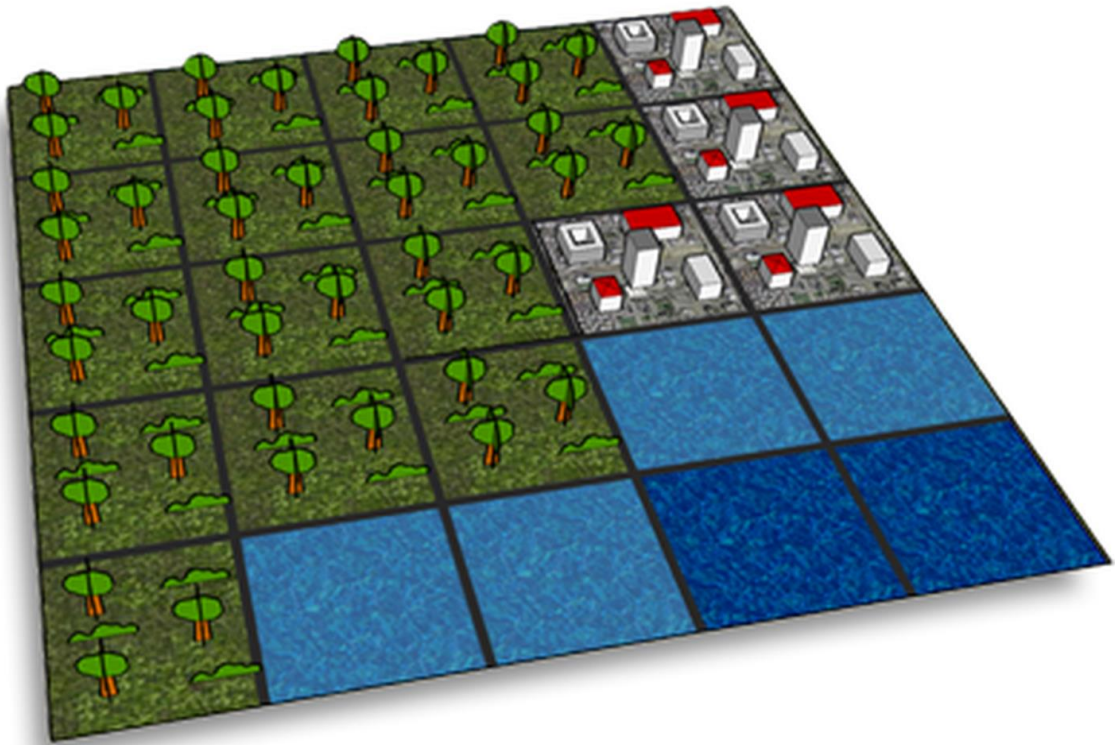
Each Landclass has its own set of scenery tiles with corresponding terrain imagery (generic images of streets, fields, forest, sand etc.). These tiles are then pieced together in the simulation, rather like a patchwork quilt.





#### 4. Autogen

Each scenery tile is further augmented by the placement of 'automatically generated' 3D models (buildings, trees etc.) on top of the underlying terrain imagery.



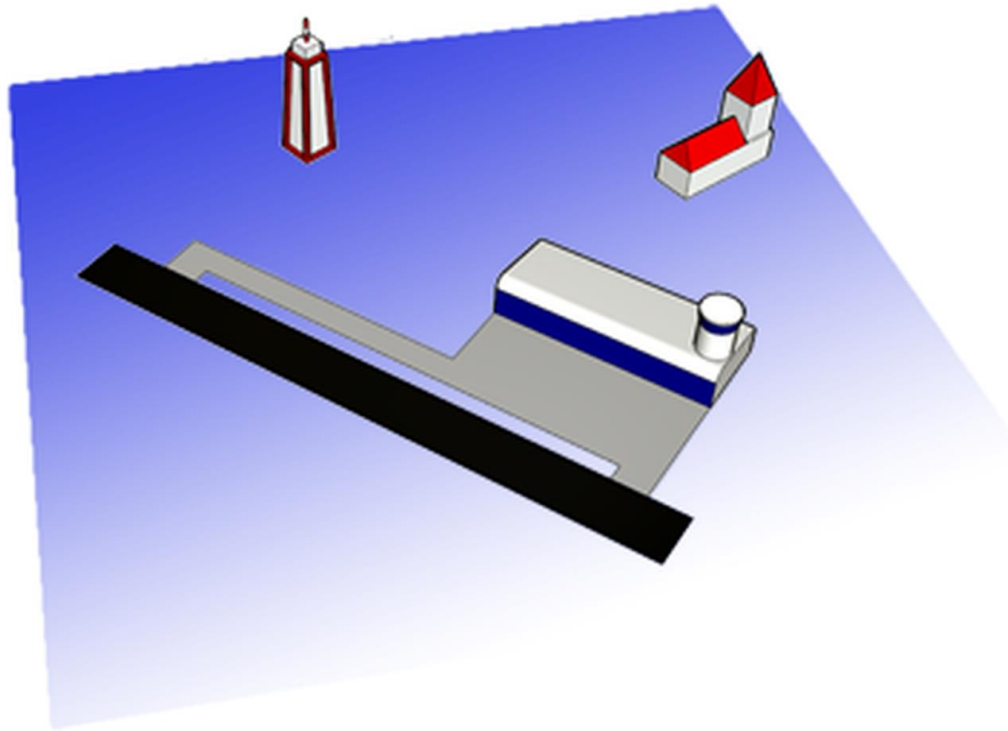
## 5. Vector scenery

Linear objects such as shorelines, rivers, and roads are then superimposed on top of the scenery tiles and provide continuity across the joins between the tiles.



## 6. Airports and non-Autogen objects

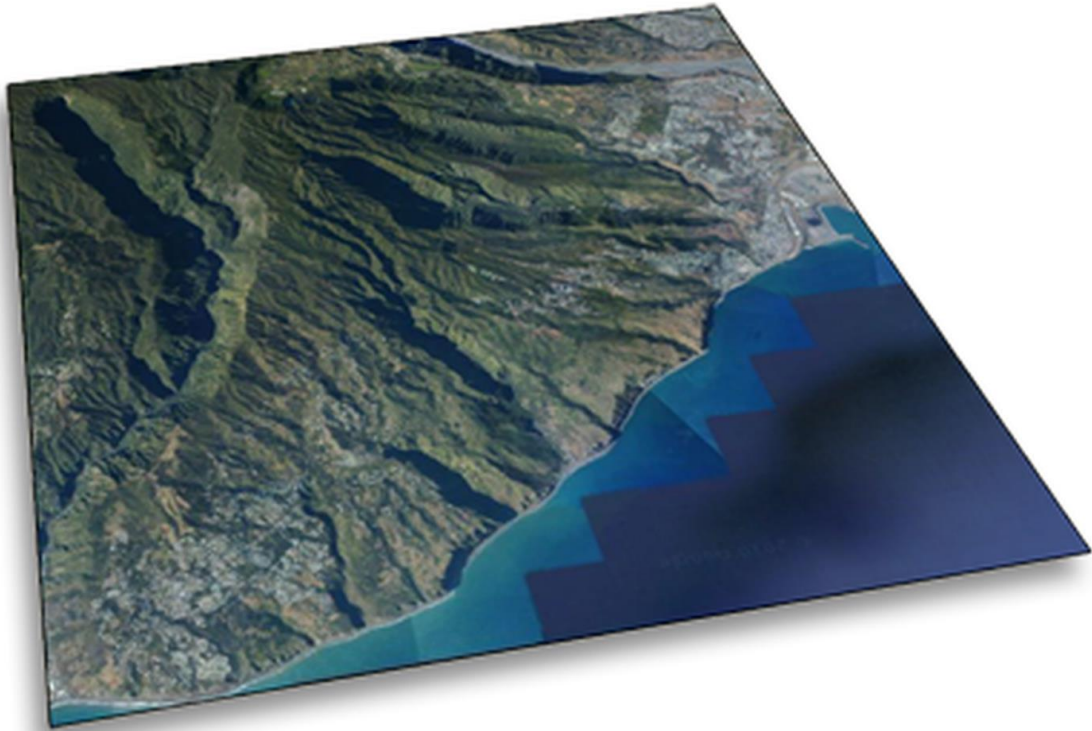
Finally, airports and specifically placed objects (landmarks such as Big Ben etc.) are superimposed on top of everything else.



This is how FSX works out of the box, and most commercial scenery products attempt to refine this approach by improving on the realism of the generic images used for scenery tiles and the Autogen and non-Autogen objects. Unfortunately the number of Landclass categories is inherently limited within FSX, so the same generic tiles will always be repeated over and over again. This approach can only ever produce a loose approximation of the real world, since each 1.2km square will always be represented by a generic set of images and objects, and even skilfully designed Landclass scenery can sometimes still result in an unrealistic or 'cartoonish' appearance.

## ***Photo-Scenery***

Photo-Scenery products (Horizon VFR Generation X, Just Flight VFR Real Scenery, TileProxy, etc.) employ a different approach. Using the same principle as Google Earth, real-world aerial photography is projected directly onto the FSX terrain mesh.



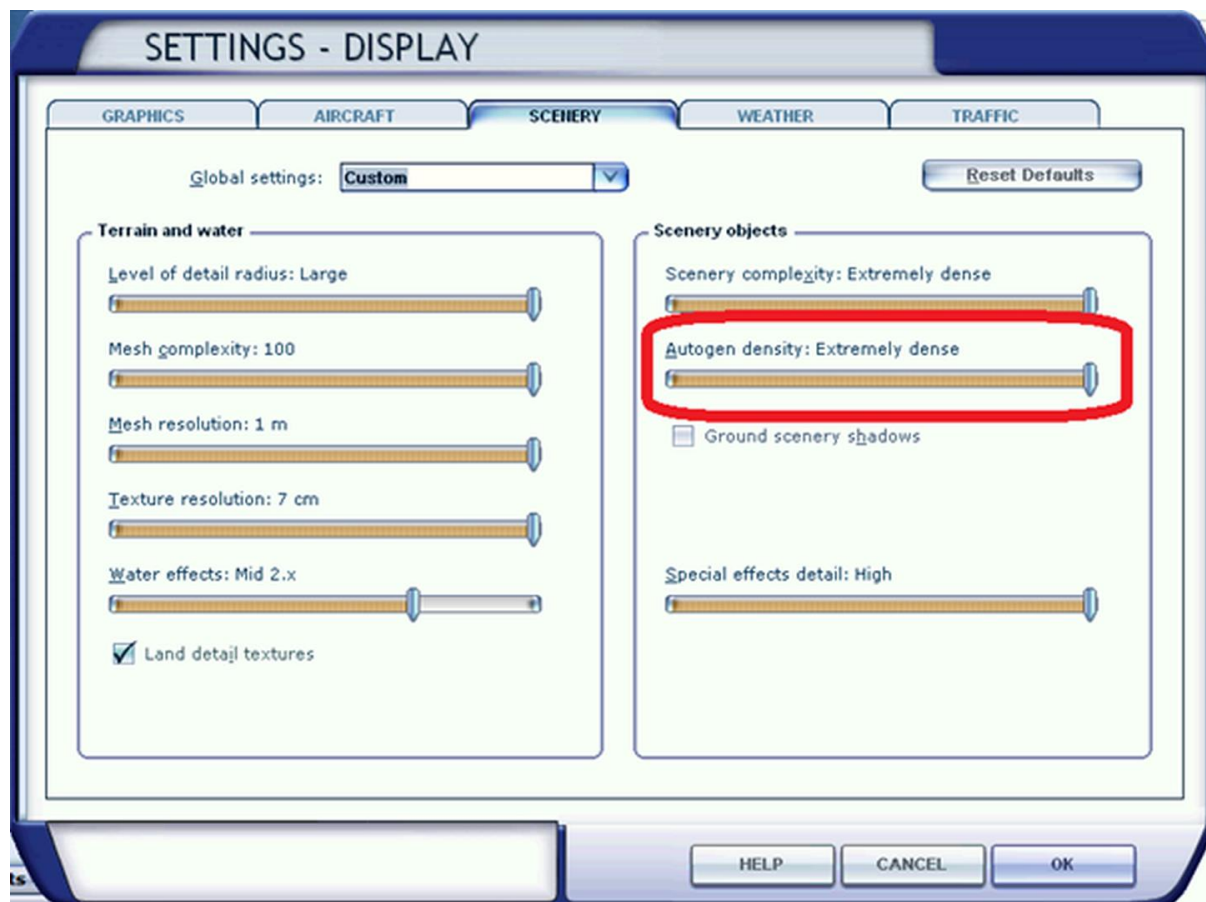
Unfortunately, in doing so, this approach also does away with the Landclass scenery layer. And because the placement of 3D Autogen objects is directly linked to the Landclass scenery tiles, it does away with those objects too. Only airport and non-Autogen objects are retained.

Without the additional 3D Autogen objects (houses, trees, buildings), this can result in a flattened, featureless landscape when viewed at low VFR altitudes, and the illusion of depth that a photograph can provide is lost.

# CONFIGURATION

## *Display settings*

All Revolution-X objects are passed to the FSX engine as Autogen, and are therefore subject to the 'Autogen density' slider on the main FSX Scenery Display Settings screen. To see all Revolution-X objects in FSX, this slider should be set to the maximum setting ('Extremely Dense'), but users with less powerful systems may benefit from using a reduced density setting if required.



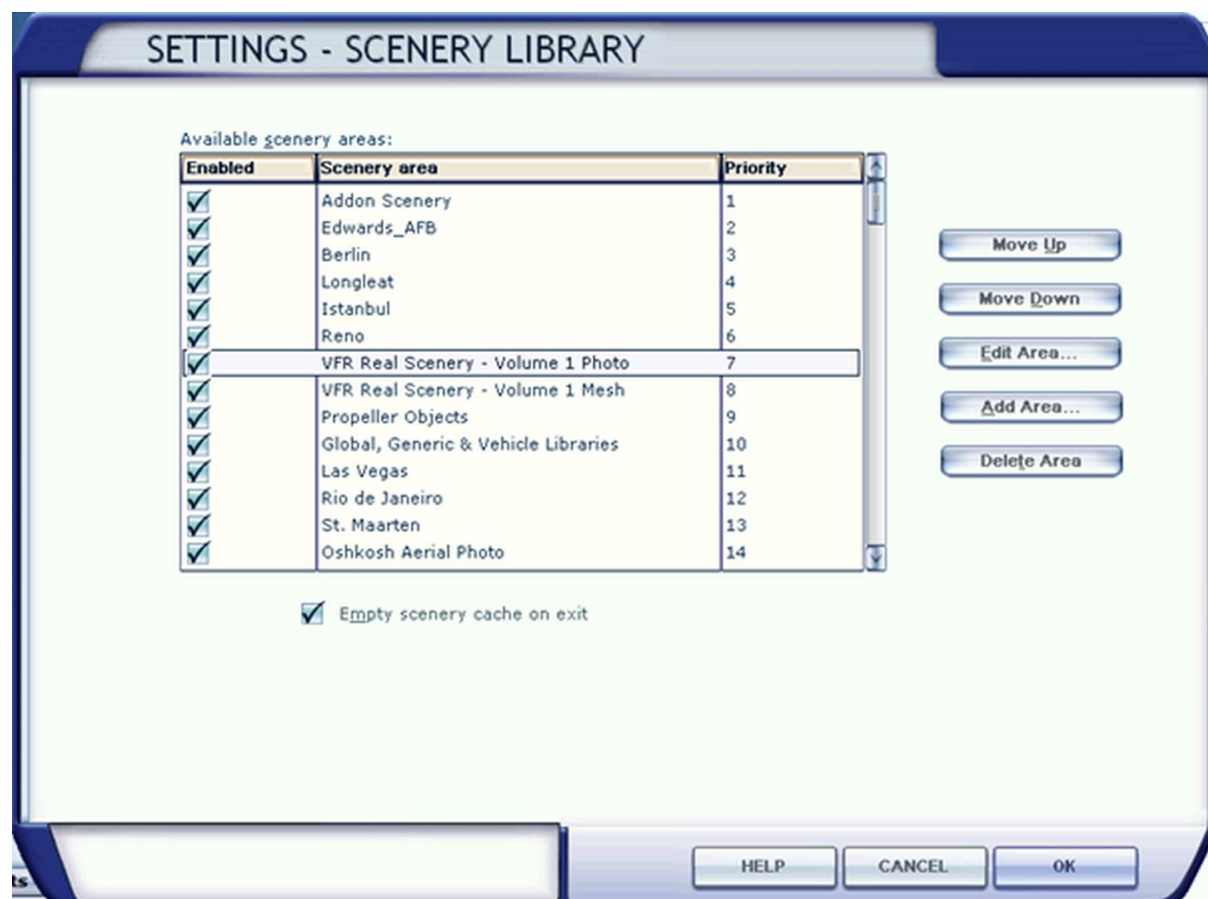
## *Scenery library priority order*

Revolution-X is fully integrated with whichever Photo-Scenery product was selected upon installation. As such it does not have its own entry Scenery Area entry in the Scenery Library, rather it will inherit the priority given to the corresponding Photo-Scenery layer.

It is therefore important to correctly configure the Priority Order of your selected Photo-Scenery product relative to any other scenery add-ons you may have within the list of Areas on the Scenery Library Settings screen. As a general rule, where two Areas overlap within the FSX world, Scenery Areas which are given a higher Priority in the list will take precedence. However, Photo-Scenery Areas (and therefore Revolution-X objects) will always take precedence over Landclass Scenery Areas, wherever they are placed in the list. With this in mind, we recommend that you move your Photo-Scenery products below all other add-ons if you wish these to take precedence, and order your Photo-Scenery Areas immediately above the default Area called 'Propeller Objects'.

Depending on the particular Photo-Scenery product you are using, we also recommend disabling (un-ticking) any Night Scenery Areas, as Revolution-X is designed to completely replace these.

## Just Flight VFR Real Scenery





# CREDITS

## ***Revolution-X***

Developer – Jeff Pollard

Special thanks to Arno and all at FSDeveloper.com for their invaluable help and expertise.

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[www.ordnancesurvey.co.uk/docs/licences/os-openspace-licence.pdf](http://www.ordnancesurvey.co.uk/docs/licences/os-openspace-licence.pdf)

[Fig15.png]



## ***Just Flight***

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Installer – Richard Slater

Leadership – Andy Payne

Sales – James, Luca, Simon, Matthew

Design – Fink Creative

Support – Martyn Northall, George Bland, John Welch

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