The PhoToPlan Family: PhoToPlan Basic, PhoToPlan, PhoToPlan Pro, PhoToPlan Ultimate

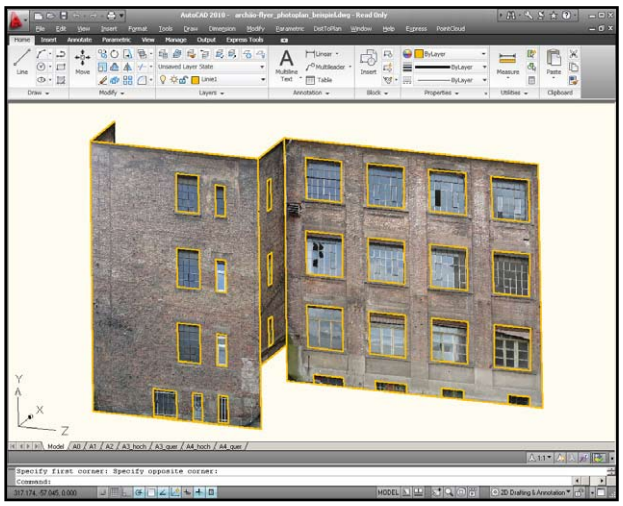
Fact Sheet

kubit

Photogrammetry directly within AutoCAD

The PhoToPlan family of AutoCAD based applications allow for evaluation of photos and plans directly within AutoCAD. The programs are built on top of each other.
The range of functions is increasing from PhoToPlan Basic to PhoToPlan Ultimate.

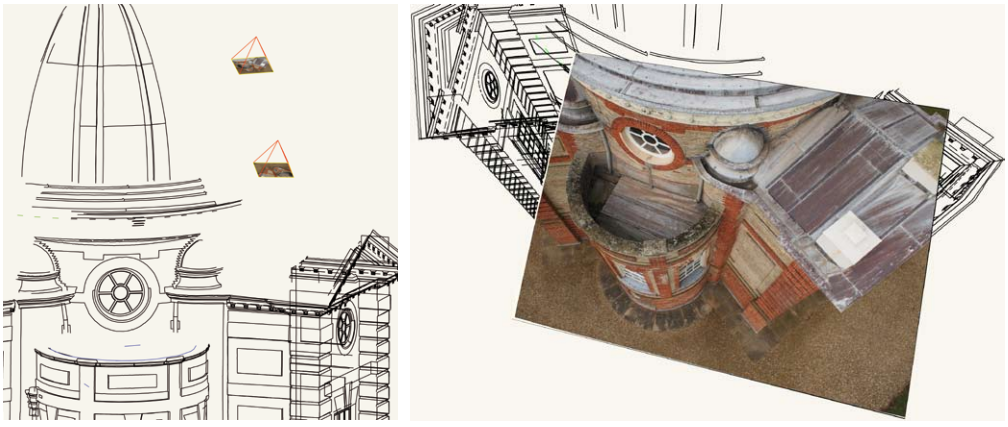
2D-functions



With PhoToPlan you may rectify photos for a 2D evaluation either with a few reference lengths from the object or with control points which have been measured on the object. The rectification planes may be positioned freely.
Within AutoCAD you may draw/ digitize directly on the photos or you may mount the photos to spatially arranged façade plans. These serve as templates for taking measurements and documenting the object photographically in the correct scale.

3D-functions

In addition to the functionality mentioned above, PhoToPlan Pro and PhoToPlan Ultimate offer image orientation and photogrammetric multi-image evaluation. By clicking the same point in two separate images, shot from different positions, PhoToPlan Pro and PhoToPlan Ultimate calculate the exact geometric position of this point in 3D-space. These 3D points are used to generate 3D line work and objects directly in AutoCAD.
3D surface objects such as cylinders and planes may be generated for a fast evaluation within PhoToPlan. If for example, a defined plane represents a wall, the window openings and sills may easily be constructed as CAD objects by tracing over the oriented image. In this way photos can be efficiently evaluated to façade plans and 3D models.
With PhoToPlan Ultimate surfaces of cylindric objects can be projected into a plane. An other additional function is the computing of ortho photos.



On the basis of a few measured control points PhoToPlan Pro and PhoToPlan Ultimate calculate the camera position, direction and distortion of the images.
Source:
English Heritage, http://www.english-heritage.org.uk

kubit GmbH has been developing software since 1999. kubit programs enable users to transfer data accurately and efficiently from various measuring devices/sensors into AutoCAD. The software then offers numerous functions for an efficient analysis, evaluation and documentation of the data within CAD. This way, kubit combines the field-proven solutions of sophisticated measurement technology with the well-tried CAD functionality for a wide range of users.

From Real World to CAD.

Photogrammetry fast and efficient

- rectifying photos precisely within CAD
- combining high resolution photos with CAD information
- fast construction of 3D wire frame models and more with only photos
- easy to learn and versatile for many applications

Universally useful

The software may be used whenever CAD information must be generated from photos.
For example:

- façade plans
- excavation documentation in the field of archaeology
- recording of building damages
- inventory documentation in the preservation of monuments and historic buildings
- preservation of evidence in the field of forensics
- recording of plants and civil engineering structures
- documentation in the field of construction and architecture

***kubit** GmbH*
Software for Surveying and As-Built Documentation

Fiedlerstr. 36
01307 Dresden
Germany

tel	+49 351 41767- 0
fax	+49 351 41767-29
hotline	+49 351 41767-25
e-mail	info@kubit-software.com

www.kubit-software.com

Requirements

Platform	AutoCAD and all AutoCAD based verticals, e.g. Civil 3D, Architecture or Map 3D starting from version 2007. You may even use AutoCAD LT starting from version 2007 for PhoToPlan Basic and PhoToPlan. Please contact the kubit sales department if you are using older Autodesk products.
Operating system	Depends on the AutoCAD version
Hardware requirements	Computer and graphic card as suggested for the respective AutoCAD version by Autodesk. Standard digital camera
Required reference information (photo rectification)	At least 4 control points (PhoToPlan) or 2 reference measurements (PhoToPlan Basic)
Required reference information (map rectification)	At least 3/6/10 control points for a 1./2./3. degree polynomial transformation
Required reference information (image orientation)	At least 9 control points or 4 control points and the camera parameters
Supported image formats	All image formats supported by AutoCAD, e.g. TIF, BMP, JPEG, PNG

Functional range of the different PhoToPlan program versions

	PP Basic	PhoToPlan	PP Pro	PP Ultimate
Rectification of photos by means of geometric characteristics and reference measurements (projective transformation)	X	X	X	X
Perpendicular or arbitrary determination of the rectification plane	X	X	X	X
Calculation of camera distortion	X	X	X	X
Further processing of the image plan with external programs	X	X	X	X
Possibility to cut images with a polygonal border and clipping of enclaves	X	X	X	X
Integrated length and height dimensioning	X	X	X	X
Integrated area evaluation	X	X	X	X
Use of all AutoCAD functionalities	X	X	X	X
Rectification of photos by means of measured control points		X	X	X
Rectification of scanned maps and plans (1./2./3. degree polynomial transformation)		X	X	X
Statistical adjustment for matching reference information		X	X	X
Mounting of several rectifications to one image plan		X	X	X
Generation of VRML and ESRI World files		X	X	X
Spatial join of image borders		X	X	X
3D drawing by means of oriented photos on 3D surfaces (plane, cylinder)			X	X
Determination of inner and outer orientation of photos			X	X
Generation and processing of surface objects (kubit cylinders and kubit plane)			X	X
Photogrammetric 3D image evaluation			X	X
Flatten drawing		X	X	X
Unwinding photos of cylindric surfaces to a plane				X
Orthophoto comutation				X
Included tutorials	X	X	X	X
Support free of charge	X	X	X	X

Trial versions
You may test the programs free of charge and without obligation. You will find more information including a request form at www.kubit.de or www.kubit-software.com. Or just send an e-mail or call us!

References
PhoToPlan programs are being used worldwide throughout multiple industries:

- ***TU Munich, chair of Building History, Building Archeology and Heritage Conversation.***
- ***Planning department of the Cologne Cathedral (Dombauverwaltung Köln)***
- ***Building association of the Freiburg Minster (Freiburger Münsterbauverein e.V.)***
- ***German Archaeological Institute, among others in Berlin and Rome***
- ***Musée National d'histoire et d'art, Département Archéologie, Luxembourg***