ArchiCAD 16 introduces a comprehensive ecosystem of solutions to ease the creation, sharing, and finding of custom BIM Components. Built-in Energy Evaluation turns ArchiCAD 16 into the “greenest” BIM solution available on the market today. Together with ArchiCAD 16, GRAPHISOFT also delivers important workflow and productivity updates to its growing portfolio of solutions. These include an upgraded BIM Server™, Cloud-integrated model sharing service for BIMx users with an active maintenance contract, and support for the IFC 2x3 Coordination View Version 2.0 for facilitating Open BIM.
MORPH TOOL
Redefining Modeling Freedom for BIM

Custom objects, components, and structures require a tool with extraordinary modeling flexibility. ArchiCAD 16 introduces direct modeling capabilities into the native BIM environment with its brand new MORPH™ tool. MORPH allows element creation with any custom geometry in an intuitive, graphical way, featuring popular modeling techniques such as push & pull. MORPH elements can be created from scratch simply by drawing a 3D polygon or by converting any existing ArchiCAD BIM element. The MORPH tool provides an optimal solution for creating custom BIM components, custom structures, and custom elements of the built environment as well as custom-designed building interiors.

Design Unique BIM Elements
Create any shape from scratch directly in ArchiCAD. The MORPH tool has no geometric limitation; every edge, point and surface can be moved and shaped freely and textures can be fine-tuned on every surface. There is no need for GDL programming or for importing special shapes from other 3D programs. Design conceptual models, custom structural elements or your own custom library, as MORPHs can be saved as GDL elements. MORPH elements are full-fledged ArchiCAD components that appear in all ArchiCAD views and lists and can be classified for structural or MEP export, making this new tool a complete solution for creating custom shapes of any type.

Transform Existing Elements
Transform any existing object, element or element group into a MORPH element, then save/re-save it as a GDL Object of any type or use it as an editable MORPH. Any 3D element type can be transformed into a full-fledged MORPH element with freely editable faces, edges, points, and listable parameters. This feature opens up endless possibilities in ArchiCAD’s element-handling. Create unique geometric variations of GDL elements to support any parameter variation you need and create brand new elements to fill in the gaps in your project-specific or general element libraries.

Easy, Graphical Editing
The MORPH tool’s easy-to-use graphical interface works with familiar 3D editing methods and interactions: select any point, edge or surface, or any combination of these sub-elements, and move them freely in space. Editing possibilities like push & pull, re-size, chamfer, fillet, smooth, bulk or segment let you turn your MORPH elements into any shape you need. Following ArchiCAD’s 3D environment conventions, real-time visual feedback helps the editing process by showing the possible results dynamically as you edit the elements.
BIM Components

Building components is one of the most dynamically developing segments of the BIM industry. ArchiCAD 16 fundamentally changes the possibilities the average user has to obtain custom BIM components for their ArchiCAD projects. ArchiCAD’s new modeling capabilities, connected to a cloud-based BIM component database, allow users to create, search, upload, and download custom BIM components of their choice. The fully-integrated web portal makes sharing BIM components a core community function. BIMcomponents.com also provides a central “marketplace” for all GDL objects to directly reach ArchiCAD users when they need those objects the most.

BIM Components Portal

This cloud-based ArchiCAD-integrated community database collects and provides direct access to tens of thousands of GDL elements in one place. The easily searchable collection continually grows with users’, GDL developers’ and manufacturers’ new elements. BIMcomponents.com helps you obtain trustworthy 3D or 2D elements in the form of parametric GDL objects by bringing the elements directly into your ArchiCAD project library with easy embed and drag & drop methods. Seek community opinion and share your custom objects with a click, widening the available selection. Built-in quality filters, user evaluations, and recommendations result in a high overall object quality.

BIM component Search in the Cloud

Object search moved to the cloud! The search function in ArchiCAD’s object settings dialog doesn’t only search locally in the loaded libraries but in the cloud-based BIM Components Portal as well. Results are filtered so that they are relevant to the users’ ArchiCAD version, language, and license type. The engine searches among object names, parameter names and descriptive texts as well. The default ArchiCAD library elements are also complemented with these new characteristics, and search results show clearly if the found elements are in the loaded ArchiCAD libraries or in the cloud.

Easy Custom Creation of Library Parts

Complementing the MORPH tool-enabled easy and fast modeling processes, new routines for saving library parts ensure a short custom object creation time. ArchiCAD 16’s sophisticated element workflow lets you save all model-based object types from the Floor Plan as well as the 3D window using the same easy steps in every case. Define the new elements’ materials, fills and pens, so that these parameters can be changed freely when using the new object. Easy-to-use Creative Commons licenses can be associated with the new objects to avoid any future copyright problems when sharing them with others.
In today’s environment, sustainability is an imperative for all building projects. The main decisions influencing a building’s sustainability features are made by the architects. GRAPHISOFT continues to innovate in “green”, uniquely offering the best workflow for sustainable design, integrated in its BIM authoring tool. The built-in Energy Evaluation functionality of ArchiCAD 16 is similar to the former standalone EcoDesigner™ product, but is based on entirely new technology. This technology allows architects to perform reliable dynamic energy evaluation of their BIM model within ArchiCAD.

**Integrated**

ArchiCAD 16 offers the best BIM-integrated workflow for sustainable design straight out of the box. No need to spend money on a separate solution to start evaluating your design ideas. ArchiCAD 16 turns the architectural building model directly into a building energy model, utilizing the state-of-the-art automatic model geometry analysis function. This zone-based technology works on complex building elements (profiled wall, shell, morph, etc.) enabling a new level of energy modeling freedom. ArchiCAD 16’s automatic model geometry analysis function sets a new benchmark for accuracy; features include the subdivision of constructional elements according to their relative positions with respect to the terrain and the external environment.

**Fast and Reliable**

After the zone-based model analysis automatically populates the Structures and Openings lists, extensive built-in databases and online data help you provide the additional input necessary for the dynamic energy simulation. Building material properties, basic MEP and green system definitions, environmental settings, operation profiles, and weather data can be added easily to the geometry information, to complete the building energy model. After that, all it takes is one click of the mouse to activate the certified VIPCore calculation engine that performs the dynamic simulation and produces the energy evaluation report. This workflow makes it possible to easily optimize design alternatives for better energy performance.

**Reports and Data Exchange possibilities**

ArchiCAD 16 offers various possibilities to communicate the ArchiCAD model’s geometry to third-party energy consultants using diverse software. Export the simplified geometry to locally-compliant, stationary energy calculation tools in Excel format, or export the model’s second-level space boundary geometry data to external energy simulation software via IFC. ArchiCAD’s own, easy-to-understand Energy Evaluation Report displays the results of the dynamic energy simulation performed by the built-in VIPCore engine, in a detailed graphical and numerical form. This feedback regarding energy-related structural performance, yearly energy consumption, carbon footprint, and monthly energy balance can be saved as a PDF file.
Together with ArchiCAD 16, GRAPHISOFT also delivers important workflow and productivity updates. These include an upgraded BIM Server™, Cloud-integrated model sharing service for BIMx users with an active maintenance contract, enhanced Library, and advanced Teamwork backup options for even greater data safety. ArchiCAD’s improved IFC handling skills with the management of a wide range of IFC data and DXF/DWG data exchange make Open BIM a perfect solution when consultants or other involved parties use different software. New features also affect ArchiCAD’s 3D editing workflows and performance.

**OPEN BIM**

ArchiCAD 16 supports IFC 2x3 Coordination View, which is currently the most implemented view of the IFC format. By supporting new IFC data types such as Classification Reference, Space Occupant and Actor, IFC export can comply with other IFC model view definitions. Although IFC properties can be numerous, their management is now easier than before. The fact that IFC properties are native ArchiCAD properties means that all well-known ArchiCAD editing workflows can be used when working with them: search for them using Find & Select, list them in Interactive Element Schedules, assign them with one click to any element, or filter them by model visibility in the IFC Manager.

**Teamwork backup options**

In addition to the familiar BIM Project Backups, local project file backups are also available from ArchiCAD 16, so you can keep working even if your BIM Server stops functioning due to a hardware problem or power outage. The BIM Project backups created automatically, let you quickly restore all BIM Server data such as server projects, user data, and roles. The new, local project backups contain all model data of the project and let you open saved files with any current or future versions of ArchiCAD to keep working while the server is restored. Combine these two easy data recovery options to find the right backup strategy in your office and keep your work safe.

**3D Editing**

Handy improvements in 3D editing take the guesswork out of 3D input while modeling. Place new objects at any clicked point, surface, or edge, or move and elevate elements in one step with the familiar drag command to shorten 3D editing time. These and further new functions are backed up with easier editing plane handling and a series of new “smart cursor” variants to make precise input even easier. Improved 3D feedback for the split command makes it easier to track what happens with the model. The easy-to-use new rotate command lets you rotate every element with the same method with a helpful protractor feedback. A new function makes it a snap to define Project North right in the model, even in 3D!