# Constructivity™ Server

**Beyond Revision Control**

*Constructivity Server* keeps track of project changes from people inside and outside your team, recording and managing every impact.

But revision control is just the beginning. Real-time collaboration, document synchronization, constraints, approvals, conflict resolution, clash detection, and building automation integration are just some of the added features.

**Libraries**

Projects can have any number of versions and branches which can be referenced by other projects. Any version can be viewed, compared, or merged with another version.

**Classifications**

Projects can be organized into a hierarchical classification structure to make it easy to find related data.

**Documents**

Projects can have documents attached containing arbitrary data or synchronized information. For example, *Microsoft Project* schedules can be associated with a project such that changes made to the building information model are synchronized with external files and vice-versa.

**Interactivity**

In addition to solo work sessions, multiple people can work on a project at the same time where changes are instantly synchronized.

**Security**

All projects and objects can be secured such that the right people have access to read and/or write. Any object can be temporarily locked such that only a particular person can make changes over a time period.

**Constraints**

Any object or property can have constraints associated requiring values to meet specified targets. *Constructivity Server* can enforce such constraints, preventing anyone from submitting changes that violate rules, or else flag such changes so they are well known.

If people make conflicting changes, they can be required to merge their changes by either keeping their changes, replacing with others, or leaving the decision for later if permitted to do so. This means there is both the rigidity needed to keep the project on target yet flexibility to merge last-minute changes and resolve conflicts later at any time.

**Approvals**

Any object or property can have approvals associated requiring permission for changes to be made.

If people make changes to restricted objects, then such changes are routed to interested parties for acceptance.

Approvals can be optimistic (accept changes pending later approval) or pessimistic (record changes to be applied later upon approval).

**Automation**

Building control systems can be attached to the server so energy usage, security, lighting, HVAC, and audio/video systems can be monitored and controlled.

**Scalability**

*Constructivity Server* is designed for fast data retrieval and posting. Data manipulation speed is independent of the size of a project, supporting millions of building elements with thousands of changes. Rather than taxing a database to render BIM content on demand, all content is pre-generated for instant retrieval.

**Manageability**

*Constructivity Server* does not rely on any external database or web server; it stores all data within a folder structure as native IFC files and index files. Getting a server up and running requires two settings: folder location and web server port.

**Extensibility**

While *Constructivity Editor* seamlessly integrates with *Constructivity Server* and can edit 100% of data, custom applications can also access the server.

*Constructivity Server* uses an extremely simple API such that custom applications can integrate with ease. There are three methods (GET/POST/DELETE) which simply accept IFC files containing all the information for change control, revision history, and merging.