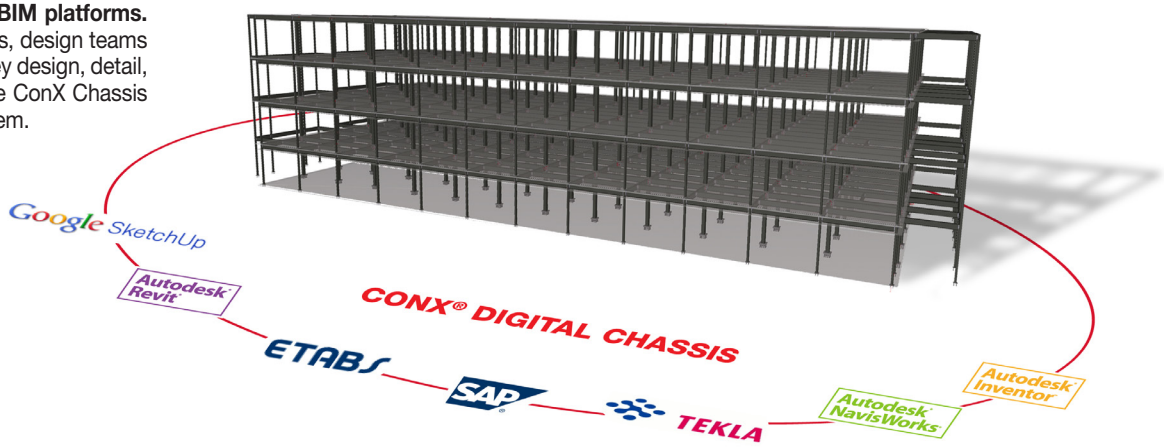
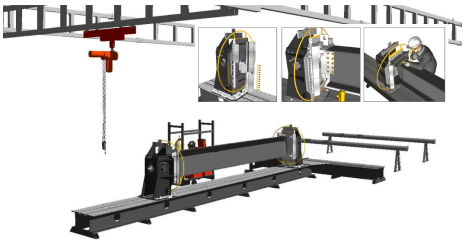
CONXCAD®

ConXCAD is a digital toolset comprised of ConX connections, assemblies and processes that are built on top of common industry BIM platforms. ConXCAD makes it easier for owners, design teams and contractors to collaborate as they design, detail, and construct structures utilizing the ConX Chassis Based Modular™ steel framing system.



Typically, design and construction teams representing many different disciplines/companies, are each responsible for specific tasks within a project. ConXtech calls this the "swarm". Each has their preferred BIM application that suits their particular design or construction tasks. With ConXCAD, all project participants can design and deliver a ConX frame leveraging the BIM software that they are most familiar with, yet still seamlessly exchange the applicable ConX geometry, terminology, and design information (data) between those different BIM applications. That data can also be used through the fabrication and construction phases of a project. By organizing around the ConX centric data rich digital chassis early on, the swarm can more accurately, collaboratively, and efficiently design and plan projects.

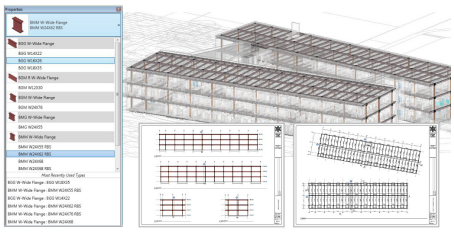
Google SketchUp for Process illustration and Early Project Design



Google SketchUp is free, has a large online model sharing network, and is widely adopted. Google SketchUp plays an important role at ConXtech, serving as a platform to easily create 3D animations and illustrative instructions on how the ConX System works. These 3D illustrations and documents are used directly on the shop floor, and in the field, to more easily communicate step-by-step fabrication and construction processes compared to the conventional alternative of written manuals or 2D drawings.

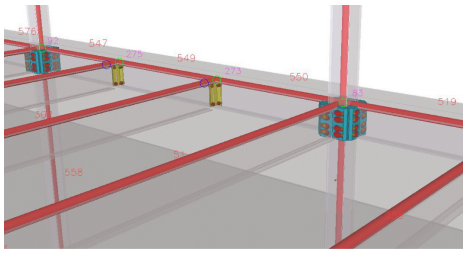
ConXtech is also creating a ConX centric library of 3D components, seed models, and toolsets within SketchUp making it easy for project teams to quickly configure, estimate, and animate their projects.

Autodesk Revit Structure for the Design Phase of a Project



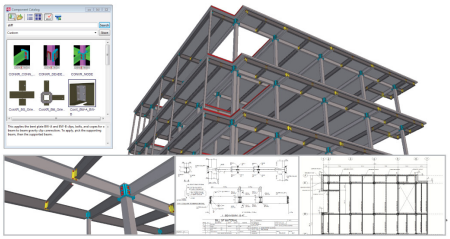
Many architects, MEP designers, and structural engineers use the Autodesk Revit family of products for commercial and residential building design. ConXtech has created a ConX specific set of structural "families" or intelligent parts that contain all of the appropriate ConX collar connections, naming conventions, dimensions and connection setbacks. These custom families are used by design, engineering and construction teams to quickly layout a feasible ConX structural frame, or "digital chassis" at the earliest design stage. That initial 3D digital chassis is spatially accurate, enabling the architect, MEP designers and other trades to prevent clashes from concept forward. This early model is also tagged with enough data to calculate quantity take-offs and generate design drawings. The geometry and data associated with these design models is then electronically exchanged with structural analysis applications to verify they meet building codes and loading conditions. Once structural analysis is complete, the BIM data is sent electronically to the construction team for their use in the detailing and fabrication phase.

CSI's ETABS and SAP for Structural Analysis

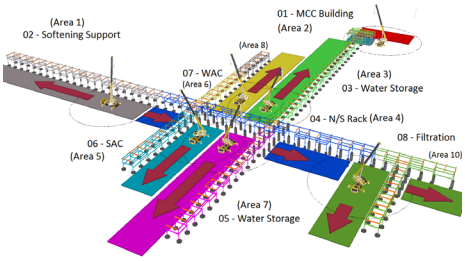


The ConXtech structural engineering support team works with the Engineer of Record to ensure that they can easily design and verify the structure on a ConX project. As a part of that support process, our team has extensive experience with CSI's ETABS and SAP programs for structural analysis in a 3D environment and also offers assistance with other analysis software such as RAM, STAAD and RISA. The ConXtech engineering support team also has experience with the digital exchange of structural geometry and design information between analysis software to and from design software such as Revit Structure or Tekla Structures to reduce re-input and expedite the design process.

Tekla Structures for Structural Manufacturing and Construction Management



Tekla Structures is a comprehensive BIM platform which spans the structural design, manufacturing, and construction management phases of projects. Using Tekla's Open API (Application Programming Interface), and unique custom component technology, ConXtech has created a library of parametric parts, connections, and structural configurators that are easily plugged into Tekla Structures. This makes it simple to define an anatomically and spatially accurate digital chassis at earliest stages of a project. The information in this detail rich construction model is sent electronically to CNC machines on the fabrication shop floor, eliminating the possibility of human error typically caused by manual data entry. The model also generates accurate Bill of Material information, which is fed electronically into MIS and ERP systems for estimating, purchasing, production management and shipping. 2D shop and erection drawings are also automatically generated directly from the 3D model, which expedites the fabrication start date, and helps assure accurate fit-up in the field.



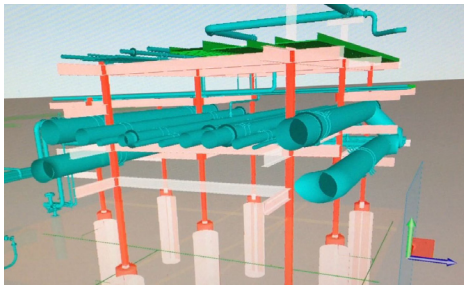
A ConX manufacturing level model in Tekla Structures also contains exact grid locations, weights, center of gravity, and dimensional information which are all critical to the field in planning the erection phase of the project. Jobsite logistics, such as crane and lay down areas, can be illustrated in 3D, and schedules animated by linking timelines to the digital objects in the 3D model. This vertically integrated construction process makes it easier for various trades and team members to understand the construction plan.

Tekla BIMsight and Autodesk Navisworks for Project Collaboration and Jobsite Planning

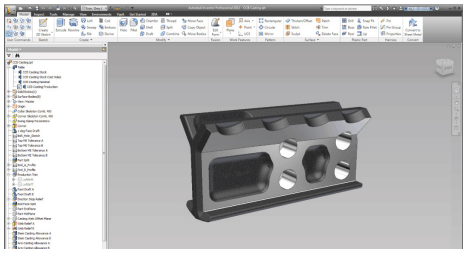
Tekla BIMsight and Autodesk Navisworks are project collaboration applications that allow all project stakeholders and trades to bring models together and communicate in a simple 3D digital environment. Built in clash checking, redlining and commenting, measuring, document linking, model colorization, and filtering makes it easy to propose design changes, detect potential conflicts, as well as visualize what will be built in the field well ahead of fabrication or construction.

The image above is a ConX industrial pipe rack project displayed on a tablet PC in Tekla BIMsight. This tool can be used on the jobsite, in real-time, to plan and track progress.

The image below illustrates how the piping (turquoise color) exported from PDMS overlaid with the structural concrete and steel (white and red) exported from Tekla Structures in Autodesk Navisworks to coordinate trade connectivity interfaces.



Autodesk Inventor for Machine and Fabrication Equipment Design



All of the proprietary ConX collar components have been designed to specific tolerances and detail in a virtual 3D environment using Autodesk Inventor. The precise 3D information is used in the quality control verification process for the ConX machined parts. Autodesk Inventor is also used to design and layout ConX proprietary jigs, fixtures, robotic welding systems, and material handling equipment used during fabrication and construction.

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