



**ProRebar® is an advanced 3D CAD software tool used to model, detail, and schedule reinforced concrete structures. In addition to improving project turn-around time, the system allows concrete and rebar to be fully realized components of each project's vision via Building Information Modeling (BIM).**

- **Eliminate tedious drawing tasks**

Built-in tools and templates allow you to model concrete and rebar quickly and accurately. Even complex shapes can be easily reinforced without the need to draw individual bars.

- **Connect to aSa downstream operations**

ProRebar has unparalleled connections to aSa's suite of rebar applications, giving detailers access to key information — such as takeoff, fabricating, and mill cert data — for all the reinforcing contained in the model.

- **Easily detect congestion problems**

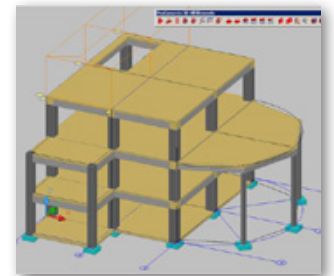
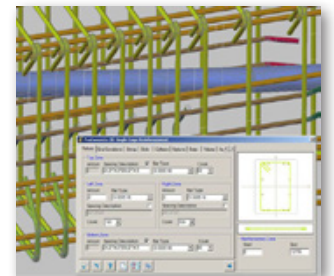
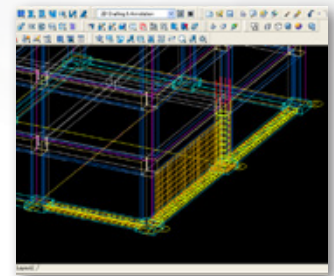
View modeled concrete and rebar from any angle or distance to find and correct congestion problems or design flaws before they become issues at the jobsite.

The ProRebar package combines Bentley ProConcrete™, a powerful 3D modeling engine, with special aSa tools designed for rebar fabricators and placing firms. Quickly and accurately model all components of your structure, including concrete, rebar, mesh, connectors, and other accessories. The system handles cast-in-place and precast concrete elements. ProRebar provides a database-level connection from the 3D model to downstream aSa operations.

### Integration and Intelligence

Integrated Structural Model (ISM) technology lets ProConcrete, the 3D engine used by ProRebar, share model data with other 3D tools, such as Revit®, STAAD®, and RAM®. Better than a simple import-export process, ISM allows for a true two-way data exchange. For example, if you change the dimensions of a footing in a Revit model, the concrete footing object — and even the rebar inside the footing — are automatically updated in the corresponding ProConcrete model. As part of the Bentley ProStructures package, ProConcrete shares a powerful graphics engine and many utilities with ProSteel — a structural steel modeling product — allowing engineers and fabricators to design and document composite structures with a single integrated tool.

Each model you create with the ProRebar package has unparalleled connections to downstream aSa rebar applications, including shop scheduling, tagging, equipment automation, fabrication, material tracking, and load tracking. These connections give rebar detailers access to key data, such as heat/mill cert information and the production status of bundles currently in fabrication.



- **Generate multiple placing drawings and schedules from a single model**

From your 3D model, ProRebar automatically generates 2D placing drawings and schedules based on customizable options you set.

- **Collaborate with engineers and others**

ProRebar allows you to share model data with other 3D tools such as Revit, STAAD, and RAM.

- **Fine-tune drawings with countless display options**

Detail styles let you control how concrete, rebar, callouts, and other objects appear on your ProRebar-generated placing drawings.

## The BIM Advantage

In addition to saving many hours of drafting time, developing a 3D model has several advantages over creating 2D placing drawings. For example, with Building Information Modeling (BIM), you can easily rotate and zoom to view any portion of your structure from any angle or distance. This allows you to visually detect congestion issues long before they become a problem at the jobsite. Additionally, the model gives all project stakeholders (including architects, engineers, and general contractors) a realistic view of the concrete and rebar relative to other construction elements, such as HVAC, structural steel, and masonry. Having a real-world, big-picture view of the structure helps eliminate design flaws, break down communication barriers, and improve project planning at all levels of the infrastructure lifecycle.

## Easy Modeling

Starting your ProRebar project is easy. You simply enter some basic information about your structure,

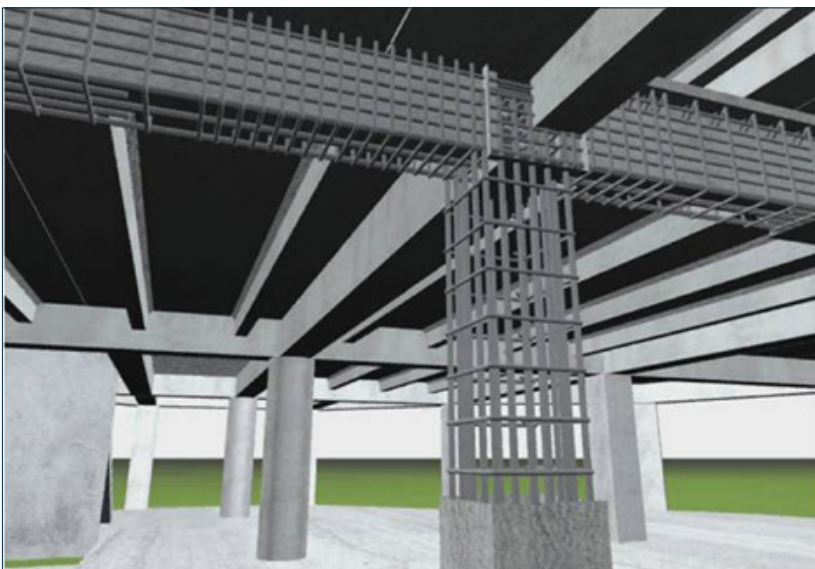
such as length, width, height, number of floors, and distance between gridlines; then, you click a point on the drawing. The program automatically draws a “work frame” — a 3D wireframe view of your floors and grids. For more complex structures, you can draw shapes and boundaries in 2D, then incorporate them into your 3D work frame.

If concrete members on all floors are similar, you can define dimensions once, then add concrete for all of the structures’ beams, columns, footings, and walls in seconds by simply checking the appropriate boxes in the Work Frame tool. If concrete dimensions differ throughout the structure, special tools allow you to define dimensions, then easily place individual concrete objects based on points, grid line intersections, or drawn paths.

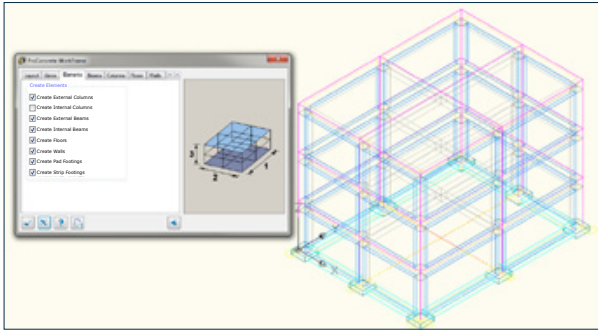
Adding reinforcing to the concrete is easy, too. You set up parameters such as clearances, spacings, laps, and hooks, then place the bars inside your concrete shapes. Later, if you change concrete dimensions, the associated reinforcing automatically updates. In addition to tools for specific structure types, such as beams, columns, and panels, the system includes a wide variety of utilities for adding and editing single bars and runs of bars, giving you complete control over the placement of all reinforcement. In areas where bars from different concrete objects overlap, you can use “Joggle” tools to automatically create offsets and shift bars, avoiding the need for tedious manual manipulations.

## Flexibility to Handle All of Your Projects

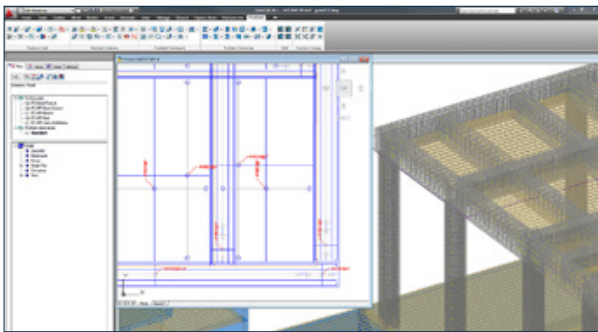
Environment data, such as bar sizes and hook lengths, are stored in files that can be easily modified, allowing the system to handle any



*On your 3D model, you can view your structure from any angle or distance, allowing you to detect design flaws or congestion problems before they become issues at the jobsite*



*With ProRebar's simple-to-use tools and re-usable templates, you can add concrete members such as footings, slabs, beams, columns, and walls to your structure in seconds.*



*From a single 3D model, you can easily generate multiple 2D placing drawings, bar bend schedules, and other reports.*

building code or special situation. Virtually any product you supply or need to document can be included in your ProRebar model, including mesh, high chairs, and even structural steel components. Tools to develop pre-cast panels and slabs, along with hoisting sleeves and inserts, are built into the system. Additionally, you can draw a 2D shape such as a "T" or hollow core, then use that shape for ProRebar-generated beams and columns.

Through direct support of 3D ACIS® Modeler (ACIS), ProRebar gives you the ability to develop

reinforcing for any three-dimensional structure, even highly irregular shapes that other interfaces cannot handle. Additionally, this feature allows you to take models from other 3D software, such as Revit or Tekla®, and reinforce them with ProRebar tools.

### **One Model – Unlimited Drawings, Schedules, and Reports**

From a single ProRebar model, you can automatically generate 2D rebar placing drawings, bar bending schedules, and parts lists. Changes to the 3D model update all related drawings and documents.

On your model, you simply draw a box around the area you want to include in a 2D drawing — or optionally select views or objects based on other criteria — and ProRebar's Detail Manager automatically generates 2D drawings for you.

"Detailing styles" that you define determine how concrete, rebar, callouts, and other objects appear on the 2D drawings. Unlike traditional 2D rebar detailing, creating drawings that show rebar from top, side, and other views does not require you to manually draw bars in each respective view. Instead, you simply select the views you want to detail, and ProRebar automatically creates the drawings you need. Numerous options allow you to control title blocks, scaling, the number of drawings that appear on each printed sheet, and other settings.

A similar process is used to automatically generate schedules, reports, and material takeoffs. Reports and schedules can be created in a variety of formats, including PDF, RTF, and HTML.

- **Customize environment data to meet your needs**

A flexible framework allows ProRebar to handle any building code, rebar shape, or environment settings you need for your projects.

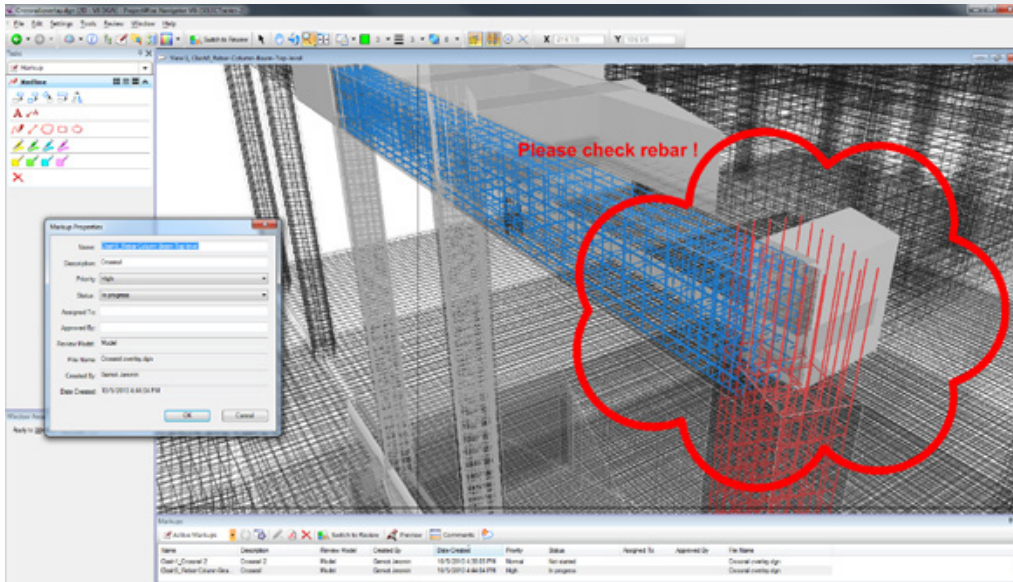
- **Develop 3D composite structures**

ProConcrete, the system's modeling engine, shares tools and functionality with ProSteel, a structural steel modeling application. Collectively known as ProStructures, this single integrated framework allows you to design and document projects that include concrete *and* structural steel.

- **Communicate more effectively**

A variety of file formats and tools allow all those involved in a project to review ProRebar models without complicated import and export processes. Options include: AutoCAD, MicroStation, Bentley ProjectWise, Luxology® Nexus rendering, and 3D PDF.





With ProRebar, rebar detailers, engineers, and other stakeholders can easily review designs without complicated import and export processes. Options include:

- Bentley ProjectWise® Navigator - perform clash detections and time schedule simulations
- 3D PDF - display objects in different modes (such as wireframe, shaded, and hidden); switch layers / levels on and off; rotate; zoom; and perform walk-throughs ... all using the free Acrobat® Reader

## **aSa** Applied Systems Associates, Inc.

Since 1969, Applied Systems Associates, Inc., has been an innovator in rebar software technology. aSa's "Complete Rebar Solution" automates nearly every step of the reinforcing steel process. Methods, procedures, and presentation practices developed by aSa have become standards in the rebar industry. More than just a software developer, aSa prides itself on providing complete solutions, including hardware, networking, and information technology services, as well as top-notch training and support from aSa's large in-house team of computer and industry experts. aSa is a Microsoft Certified Partner and supplies business solutions from Sage Software, Inc., and engineering solutions from Bentley Systems, Inc. — including the CAD design package MicroStation. aSa also provides a comprehensive line of paper forms and office supplies.

- Estimating
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- Scheduling
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- Tags
- Equipment Interfaces
- Opto-Shear Console
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