Maximizing building supply with Intelligent Home plans™

An exclusive AVID supply chain partnership program

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The Problem

The building material supply chain and the residential home construction industry are separated by many factors. Lack of consistency, communication, planning, procedures, monitoring, mediation, process-control and product availability are just a few of the shortfalls that perpetuate a truly dysfunctional relationship.

Many companies have developed solutions that address parts of these broken connections with varied success. These solutions fall into one of five categories:

- Home Design
- Modeling & Visualization
- Structural Engineering
- Manufacturers' Proprietary
- Quoting & Estimating

Within each of these categories are a number of companies offering a multitude of software and hardware solutions targeted at one aspect in the overall building process. Many companies offer multiple packages within a single solution to attack locally specific challenges. The following chart clearly shows the wide range of products available today.

Home Design	Modeling & Visualization	Structural Engineering	Manufacturers Proprietary	Quoting & Estimating
−ArchiCAD	−3D Studio Max	−StruCalc	−Wood E-CAD (LP)	−Planswift
−CADSoft	−Paradigm	−BeamChek	−FastBeam (GP)	−BC Estimator
−ChiefArchitect	−Revit	−Keymark	−Wood E-Cut(LP)	−Calculated Ind.
−SketchUP	−EQS	KeyBuild	−BuildRite	−Digital Canal
−TurboCAD		KeyBeam	BC Framer	
−Revit		KeyPost	BC Calc	
−AutoCAD			BC Column	
−Punch			−MiTek	
−Softplan				
−Big Hammer				
−Home Designer				

The problem exists that no company has presented a holistic approach that connects the design, engineering, specification, production and supply elements of the residential construction industry.

More importantly, individual solutions tend to lead to additional challenges which in turn lead to more solutions. This complexity is further complicated because the solutions offered by providers are linked to the purchase of provider products. Software companies want to sell more software, hardware companies want to sell more saws and manufacturers wants to sell more products. There is no incentive for any solution provider in any part of the chain to address the challenges of the entire building process.

The Opportunity

The failure to seamlessly share vital information throughout home building production chain results in a tremendous amount of labor and material waste. An opportunity exists for a company, consortium or partnership that can develop a methodology to link all home building procedures and participants together in a single transparent shared environment.

Barriers

The key to any residential home building project is the initial home design. This design is presented in a set of construction documents (commonly known as a home plan) that serves as the "assembly instructions" for the new home. To coordinate each phase of construction, every participant and every process references the information on these documents. Properly detailed and accurate home plans combined with the ability to interpret those plans leads to efficient and cost-effective construction practices. The lack of plan detail and accuracy or the lack of proper interpretation of the information provided can lead to poor construction practices, tremendous waste and even total failure of the final product.

Home plans are created by a number of different types of people. Architects, trained and licensed in the art of home design, are the first professionals that come to mind. But, few architects remain in the residential home design industry because of their high cost and limited local scope. The more common providers of residential home plans are home designers. Anyone can be a designer as there are no set standards or licenses required. Anyone who can draw a line or operate computer design software can declare themselves a "home designer". Needless to say, without proper standards, licensing or laws to govern the home design industry, the quality and accuracy of the work provided is very inconsistent. It is this inconsistency that has hampered the development of a common link through the many phases of home construction.

Solution

Large building supply companies are usually created by combining smaller local supply chains together under one branded umbrella. These local chains have their own practices, products, equipment and idiosyncrasies. Most local firms are slow to alter their traditional business practices especially if they have a good financial history. Because of this, it is detrimental to force any successful local retailer to modify any characteristics that may hinder their future performance. Instead, it is better to manage the resources of those local retailers, provide flexible services and products that can support them and maximize the economies of scale afforded by the overall retail network.

Large material supply chains, like PRO-Build, Builders First Choice, 84 Lumber and Stock Building Supply need an able, flexible partner that can link all of the construction phases together. This partner must provide turnkey processes and procedures that can take a diverse selection of local market players and create a unified manageable process. More importantly, this partner needs to be adept at home design, knowledgeable of common and modern construction practices and have hands-on expertise of the entire building process.

AVID Home Studios is that partner and is ideally situated to provide a unique and robust program to place PRO-Build in the forefront of localized jobsite control. AVID is a residential design firm that combines sophisticated home designs and jobsite support services with years of industry experience. AVID has the ability to provide PRO-Build with a single source of plan design, job site management, process control, production interface and logistical support through every step of home construction. AVID's deep and broad knowledge will allow PRO-Build to fully capitalize on it enormous and diverse network of retailers by bringing consistency and data sharing to every platform and location. AVID's industry expertise and PRO-BUILD's wide market penetration and national footprint are a perfect combination for a successful partnership that will dominate the industry for years to come.

INTELLIGENT HOME PLANS™

The home plan initiates the entire building project. Every aspect of construction refers to the home plan.

- An Intelligent Home plan™ allows you to control the entire process.
- If you control the process, you control the material flow.
- If you control the material flow, you own the supply chain.

INTELLIGENT HOME PLANS™ ARE INTEGRATED INTO EVERY ASPECT
OF THE TOTAL CONSTRUCTION PROCESS INCLUDING QUOTING,
TAKEOFFS, MANUFACTURING, SHIPPING, INVENTORY AND DELIVERY.

An Intelligent Home plan addresses all of the following questions:

- How will minor changes in a home plan affect other aspects of the total project?
- How will change orders on partially completed projects affect future operations and costs?
- How does the design data interface with the manufacturing equipment and other process controls available to the local retailer?
- What construction methods are used or preferred by the builder?
- What are the local building codes and does the structure meet those codes?
- What materials are available to the local PRO-Build retailer?
- Can a builder quickly quote, price and order materials on time for the project?
- Can a builder substitute different product brands into the project design?
- Does the plan streamline the entire procurement process?
- Does the plan eliminate duplication of efforts?
- Can the plan be reused in future projects and quickly customized to meet specific market demands?
- Does the plan eliminate errors during construction and improve the efficiency of labor?

Intelligent Home Plans are "standardized". Drawing standardization does not infer that the house design is the same. It means that every different house design is created with set of rules that governs how the drawing are created. This standardization includes:

- Common drawing techniques
  - Drawing layers, wall thicknesses, line types, fonts, color coding and other elements and techniques are uniform regardless of design software, platform or operator. This allows any designer within the network to create, modify and forward all document with the assurance that all network designers can read and interpret the drawing information.
- Common file formats
  - Images, vector drawings, graphics, and other electronic documents are available in formats that allow for instant accessibility. "Network wide acceptable formats" will produce more consistent output and reduce time and effort required to convert files to fit a unique, locally accepted file.
- Common labeling
  - Increments, units of measure, dimensions, callouts, and other data specific information are presented using a common set of rules. Information is easily obtained from all data regardless of the operator, software or hardware characteristics.

Time Saving

Standardization saves considerable costs in time and effort across the Retailer Network. Intelligent Home Plans will no longer need reworked or redrawn. These plans can quickly enter the building process in the initial phase and support every subsequent task in the overall project.

Brand Building

Standardization also creates output in a uniform and consistent manner. This uniformity will promote the PRO-Build brand as the provider of quality home plans that improve the efficiency of all aspects of home construction.

PARTNERSHIP OVERVIEW

This proposal describes a supply chain partnership between AVID and PRO-Build ("The Partnership"). The Partnership will use Intelligent Home plans™ to improve current builder revenues and capture new builder business. The Partnership engages the builder in the initial design phase of new home construction projects and integrates the subsequent building processes into the diverse PRO-Build retail network. This integration will improves efficiency, reduce waste and streamline production and supply efforts for both the builder and PRO-Build retailer ("The Retailer").

PARTNERSHIP GOAL

All efforts of The Partnership are focused on one goal – create a set of value propositions linked directly to an Intelligent Home plan™ and integrate every aspect of the building process directly to The Retailer.

**Builder Support Products/services offered through the Partnership:**

- Stock and custom home designs developed for every region serviced by The Retailer
- Accurate material take-offs linked directly to product specifications available at The Retailer
- Detailed construction documents for accurate jobsite construction
- Visualization and efficient modification processes to streamline custom change orders
- AVID Market Manager Network and/or Studio for local builder and Retailer support
- Online project management services to control every aspect of the job site
- Single source for all materials and support services

ALL CHANNEL PARTICIPANTS WILL ENCOURAGE EVERY BUILDER TO USE INTELLIGENT HOME PLANS™ AND DESIGN SERVICES AVAILABLE FROM THE PARTNERSHIP

PARTNERSHIPS ENCOURAGE GROWTH

PRO-Build grows its company footprint by acquiring strong companies in strong markets.

AVID's focus is based on national growth, too. Online users from all over the US have used AVID's home plan design services. That demand is increasing exponentially as online visitors have increased more than 10 fold in less than one year.
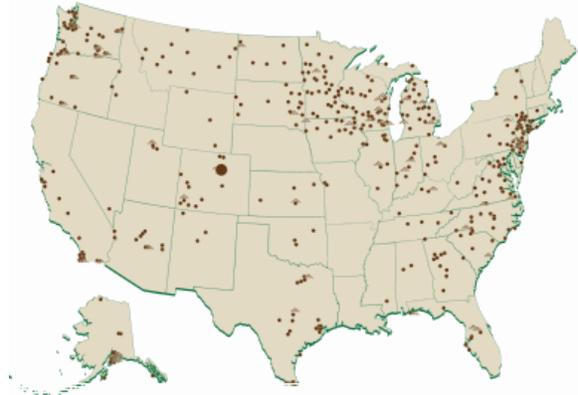
PRO-Build Retailer Network Locations
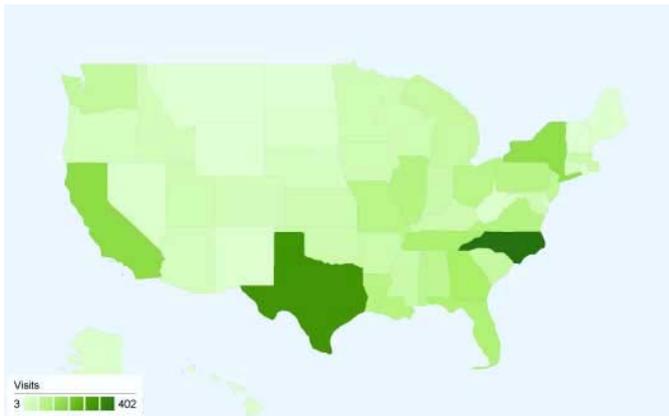
*Geographic Distribution of AVID online visitors*

AVID's online customers include home builders and home buyers who purchase home plans then use a chosen builder to complete the construction. Some home buyers build it themselves. Whatever type of customer, AVID designs always please the builder because of plan detail, accuracy and rapid and ready customer support.

The Partnership will add new value to current AVID relationships.

Those relationships include:

- Concrete Manufacturers (CCMA)
- Do-It-Yourself building associations (U-Build It)
- Real Estate Companies (Re-Max)
- Land Developers (Blackstowne Development)

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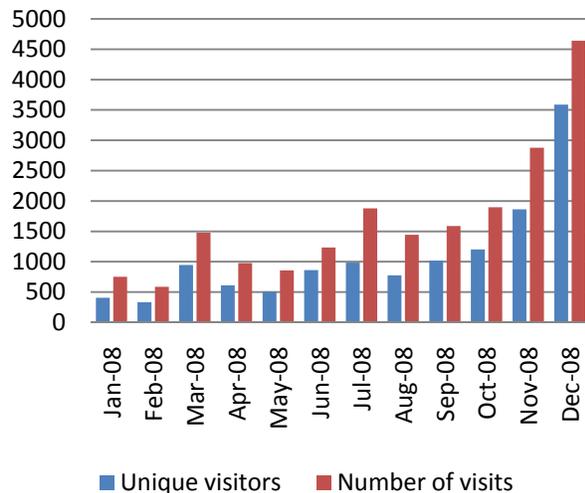
OUR CUSTOMER – THE HOME BUILDER

The builders' current source for home plans will determine the proper application of services offered by The Partnership.

Builders obtain home plans through one of three methods:

- The purchase of a pre-made plan online.
- The use of an independent designer to create a plan or alter an existing plan.
- The use of an in-house designer to create or alter a plan.

Builders engaged by The Partnership are placed in one of two categories:

- Builders using existing home plans.
- Builders looking for new home plans.

Builders with Home plans will be directed to services and products that allow an efficient integration of those plans into the local Retailer processes.

Builders looking for new Home plans will be directed to online Partnership sources of stock plans or directed to one of The Partnership designers. The designer may be on staff at the local Retailer, locally employed at an AVID Studio or connected remotely from AVID corporate headquarters.

THE BUILDER IS THE TARGET – THE INTELLIGENT HOME PLAN™ IS THE ARROW

The following examples demonstrate a seamless interface between Partnership personnel and the customer. The experience promotes simple customer interfaces with three objectives:

1. Evaluate the plan needs of the builder customer.
2. Fulfill those needs by engaging AVID HQ or AVID local representative.
3. Interface plan information with local Retailer and builder through AVID centralized procedures to produce - construction documents, local product specifications, manufacturing interfaces and project oversight/control.

The process promotes a local streamlined support service for each builder customer. All information is tailored to each every customer of each Retailer including:

- Custom and stock home designs created to meet the needs of the local market.
- Home designs created to meet local building codes and HOA requirements.
- Material take-offs custom made to specify products available at each retailer.
- Data interfaces between all plans and the local manufacturing hardware available.
- Economies of scale allow every local PRO-Build retailer to take full advantage of all products and services available in the network.

The following sample customer interfaces are:

- Builders who have home plans.
- Builders who convert to HBIP home plans
- Builders without home plans.

Other customer interfaces will occur. These examples are presented to show the seamless integration of all processes through a combination of local AVID representatives and centralized processes and controls.

The Customer Experience – Builder has home plan (Intelligent Home plan™ conversion)

Builder Customer/Prospect	Retailer Associate	AVID Team Member
"I want to build the house on this home plan."	"This looks very similar to one in our library. I could save you some time and money - do you want to look at that?"	
"Nope, the home owner wants this plan, as it is."	"OK, we will integrate your plan into our system to reduce the time and money you will need to build this house. Let's go through this questionnaire about your personal construction methods, materials, codes, etc. We'll keep this in our files so we can quickly access this information on your next build." Associate and builder complete questionnaire and send it and the plans to AVID.	AVID receives questionnaire and plans. Plans are provided by CAD file or scan. AVID cross references Partnership library to find similar plans that may save builder money. Notifies Associate and builder. AVID references PB Retailer Database to find product specifications and mfg. machinery available.
		AVID uses existing plan to create a structural model. Model is created using builder specifications and code information. Material take offs are created and data interface files for specific manufacturing equipment are created. Take offs and digital files sent to Retailer.
	Material take offs are received and used to create an accurate quote for builder and to ensure that materials are on hand.	AVID Market Manager contacts builder introducing other support services and products.
Builder interfaces with AVID MM and implements project tracking system to track & schedule project.		AVID Market Manager supports Retailer throughout project.
Builder receives quote from Retailer & makes deposit.	Retailer sends interface data file to manufacturing facilities and schedules delivery of products to job site.	AVID saves new drawing file to Partnership databank. Drawing includes code specs, material specs, and equipment interface specs.
Builder hires subs, receives materials and completes building project.	Retailer and AVID MM ensure positive experience and follow up to prepare builder for next project.	AVID places drawing online. Other retailers may use this design or modify to meet their particular specifications.

The Customer Experience – Builders with Home plans (convert to Partner home plan)

Builder Customer/Prospect	Retailer Associate	AVID Team Member
"I want to build the house on this home plan."	"This looks very similar to one in our library. I could save you some time and money - do you want to look at that?"	
"Sure, let's have a look." Browses through the website under the direction of Retailer Associate. "This is close to the plan I have here. Can we make it with trusses instead? Also, that was designed for a 40 load. Can we make it 90? That's what my local code calls for."	"Sure. Let's get the AVID Market Manager on the phone and we can go through this whole project. He can also set up a remote link with AVID designers and make all the plan modifications you need. Also, let's fill out this questionnaire so we can design this plan to your specific building preferences."	AVID receives questionnaire and notification about the stock plan number. AVID Market Manager mediates design effort and arranges an A-Link connection to AVID corporate designers if necessary. AVID references PB Retailer Database to find materials stocked and mfg. machinery available.
Builder and AVID MM work with AVID designers to make plan modifications locally or through the A-Link remote service.		Since the plan design is linked to the structural model, plan modifications are updated in the model. Once design changes are made, model can be manipulated to builder specifications and local code requirements. Material take offs are created and data interface files for specific manufacturing equipment are created. Take offs and digital files sent to Retailer.
	Material take offs are received and used to create an accurate quote for builder and to ensure that materials are on hand.	AVID Market Manager contacts builder introducing other support services and products.
Builder interfaces with AVID MM and implements project tracking system to track & schedule project.		AVID Market Manager supports Retailer throughout project.
Builder receives quote from Retailer and makes initial deposit.	Retailer sends interface data file to manufacturing machinery and schedules delivery of products to job site.	AVID saves new drawing file to Partnership databank. Drawing includes code specs, material specs, and equipment interface specs.
Builder hires subs, receives materials and completes building project.	Retailer and AVID MM ensure positive experience and follow up to prepare builder for next project.	AVID places drawing information online. Other Retailer may use this design as is or make slight modifications to meet their particular specifications.

The Customer Experience – Builders without Plans (modifies Partnership stock plan)

Builder Customer/Prospect	Retailer Associate	AVID Team Member
"I need a home plan."	"Great! The best way to get a new home plan is to start with our online library. It may save you a lot of time and money. If you don't see exactly what you want, we have a very efficient process of making changes and modifications to the plan. We want to get it just right for you."	
"There, I like that one. Plan #222!" But, can I put a three car garage in it?"	"Sure." [pointing at the screen] "Now, as you can see by the details on the screen, this plan is designed with a 90 load, using 2x6 construction and already has manufacturing interfaces. It won't take long to get your project up and running. Work for you?"	
"Sure, but I build with 2x4's and I really need a three car garage."	"OK, let's get the AVID Market Manager on the phone and we can go through this whole project. Also, let's fill out this questionnaire. We want to be sure that the 2x4 construction is the only change we need."	AVID receives questionnaire and notification about the stock plan number. AVID Market Manager mediates design effort. AVID references PB Retailer Database to find materials stocked and mfg. machinery available.
		Since the plan design is linked to the structural model, plan modifications are updated automatically in the model. Once design changes are made, model can be manipulated to builder specifications and local code requirements. Material take offs are created and data interface files to manufacturing equipment is updated. Take offs and digital files sent to Retailer.
	Material take offs are received and used to create an accurate quote for builder and to ensure that materials are on hand.	AVID Market Manager contacts builder introducing other support services and products.
Builder interfaces with AVID Market Manager to incorporate project tracking system.		AVID Market Manager supports Retailer throughout project.
Builder receives quote from PRO-Build and makes initial deposit.	Retailer sends interface data file to manufacturing facilities and schedules delivery of products to job site.	AVID saves new drawing file to Partnership databank. Drawing includes code specs, material specs, and equipment interface specs.
Builder hires subs, receives materials and completes building project.	PRO-Build and AVID MM ensure positive experience and encourage builder customer to continue with relationship.	AVID places drawing information online. Other PRO-Build retailers may use this design as is or make slight modifications to meet their particular specifications.

With these types of local customer experiences backed by AVID - the single source for start-to-finish project control – PRO-Build will enjoy the following benefits:

1. Control of entire building process from design to completion.
2. No restrictions from large vendor software, resources and programs.
3. Freedom local software or hardware restrictions.
4. Custom local product specifications linked directly from the intelligent design process.
5. Control of the best localized product selections for their customers
   a. Increasing profit margins and turns
   b. Decreasing inventory
6. Brand and market differentiation with continued customer loyalty

THROUGH THIS PARTNERSHIP, ONLY PRO-BUILD IS ABLE TO PROVIDE BUILDERS WITH THIS DEPTH, BREADTH AND SCOPE OF PRODUCTS AND SERVICES.

AVID brings these benefits to the Partnership:

- Consistency in plan format and detail level leading to:
  o Reduced costs of design processes
  o Convenience of reusable plan library available nationwide.
- Process control and integration with a variety of tools, products and personnel.
- Material takeoffs specifying locally available products custom made to each Retailer.
- Single source for plan modification, customization and interface.
- Flexible plans with interfaces to all makes of manufacturing platforms.
- Versatile plans that can be quickly altered to meet any local builder specs or building codes.
- Local, personal builder support and services.

INTELLIGENT PLAN COMPARISON: CURRENT STATUS VS. PARTNERSHIP

Category	Current	The Partnership
Home plan Sources	• Many different sources with little to no control over quality of resource or legal copyright. • Plans may not be buildable and require considerable modifications. • Difficult to integrate into PRO-Build processes.	• Consistent quality plans. • Branded plans. • "BUILDABLE" plans. • Single source online library.
Product Specifications	• Created locally and not shared between locations. Stagnate, as each list specifies only locally available products.	• Flexible product specifications may be used in multiple locations. • Customized program links with SKU's at each yard.
Code compliance	• In house or third party designers make modifications to existing plans in attempt to meet codes. • Outside engineers requested to seal plans requiring revisions that may be completed by in-house staff or outside designer.	• Centralized AVID design staff can update plans to meet any code requirements throughout the US. • In-house engineers available to seal plans and make necessary changes.
Plan Reuse	• No centralized plan library. • Duplication of efforts throughout retailer chain.	• Central repository of plans available to all retail locations. • Quick search and reference to over 1000 modifiable plans.
Copyright & Legal Issues	• Unsure of copyright restrictions from third party plans.	• Partnership has licensed copyrights to all stock plans and future plan design and modifications.
Manufacturing interface	• Inconsistency of input and structural modeling, along with the variations in machinery throughout chain. • Difficulty experienced in machinery interface.	• AVID maintains consistency in design, modeling and formatting. • All plans can interface with all machinery.
Plan Designers	• Third party. • In-house (estimated 100 Softplan Retailer licenses). • None.	• Consistent, builder/customer in-house staff. • A-Link™ brings designers to job site. • Designer Direct™ allows quick access to design staff.
Field Support	• Varies.	• Consistent throughout retail chain with Market Managers and AVID Studios.

BRINGING THE PARTNERSHIP TO MARKET

Three steps to a successful market introduction:

1. Due Diligence
2. Recommendations
3. Implementation

AVID BRINGS BIM TO PRO-BUILD

Due Diligence

AVID will survey each Retailer to identify resident processes and capabilities. This effort will develop a list of characteristics for each Retailer. Typical characteristics include:

1. Manufacturing tools employed
    a. Truss systems
    b. Saws
    c. Manual cut operations
    d. Other
2. Software systems used
    a. Structural analysis (MiTek, Keymark, Javelin, etc.)
    b. Estimating tools (digitizer, CAD, Planswift, Manual estimating, etc.)
    c. I-joist software (Boise – BC Framer, Weyerhaeuser – Javelin, GP, IP, LP, etc.)
    d. Saw software for Saw Tech or Hundinger.
    e. Residential design software – Softplan, Chief Architect, AutoCAD, or others.
3. Local business practices
    a. Is the structure outsourced to the manufacturer?
    b. Are structural analysis services offered?
    c. Are home design services offered?
    d. How are plans engineered?
    e. How many hours do they spend on these practices?
    f. What is the turn around?
    g. What is the Builder demographic?
    h. How many designers & resources are employed?
    i. What are the local building practices ("this is how we do it here")?
    j. How many yards are serviced (i.e. "We supply trusses & I-joists to 5 yards & 40 sales associates")?
4. Other resources employed
    a. Large format architectural printers and scanners
    b. Computers and web browsers
    c. FTP or file sharing services
    d. Plan storage databases
    e. Filing systems and formats

Recommendations

Using the results of the due diligence process, AVID will develop an implementation plan for the overall Partnership and specific recommendations for each Retailer. To accomplish this, it will be necessary to:

- Develop a file sharing platform
  - To reduce the duplication of effort, improve the efficacy of resources and maximize employee talents, a robust file sharing strategy must be developed to share files between AVID and Retailers.
- Implement a plan library
  - Reconfigure current AVID library and include files from Retailer libraries in a consistent format that meets the needs of the diverse offerings at each Retailer.
  - This effort will streamline design processes and maintain completed work for reuse in all markets.
- Standardize all drawing techniques and practices throughout the system.
  - AVID will standardize all design models.
    - Example: Wall types from 2x4, 2x6, ICF, SIP's, and CMU with all possible combinations of brick, stone, siding, stucco, etc. to a universal format for each retail staff designer.
  - AVID will create design rules for universal drawing methods.
    - Example: Many designers use 4" or 6" wall thicknesses when designing for 2x4 and 2x6 construction, respectively. Nominal dimension of these walls are 3 ½" and 5 ½" (not 4" and 6"). Non standardized drawing methods can cause file incapability with both DWG and DXF files. Standardized drawing rules for every aspect of design are crucial regardless of software.
- Standardize stock product offerings
  - Creating a basic set of options for each plan will speed modification required when complying with local design criteria.
  - This effort will save time and money and create a larger home plan library available to all markets.

Implementation

- **AVID** will add additional coordinators at our corporate office to mediate and streamline communications.
- **AVID** will expand or outsource MiTek, Keymark, Javelin and other whole house structural design processes to maximize time saving and money saving strategies.
- **AVID** will employ or outsource engineers capable of sealing home plans in all 50 states.
- **AVID** will identify and recommend strategic locations to establish residential design Studios to service groups of Retailers.
- **AVID** will maintain a consistent and custom product offering for each local market.
- **AVID** will expand current market manager coverage to service small groups of Retailers. Market Managers will teach and train Retailer sales associates in the art of selling products and services offered by The Partnership. Market Managers will focus on how these products and services improve profit margins, increase sales, maintain client loyalty and ensure repeat business.
- **AVID** will grant all Retailers access to the entire AVID library and train them in the operational capabilities of the website.
- **AVID** will actively maintain and develop new designs for all markets.
- **AVID** and PRO-Build will enjoy joint ownership of all developed plans created during the partnership.
- **AVID** will educate all retailers about contracts, documents and filings for copyright protection eliminating potential liability of infringement by PRO-Build or AVID employees.
- **AVID** will maintain and present detailed monthly summaries of all work related to AVID Home Studios to each Retailer and a network wide summary to the corporate office.
- **AVID** will make a detailed quarterly report to the PRO-Build board along with recommendations for improvement and future development.

The Partnership will promote continued process improvement leading to product and service offerings second to none.   These products and services will be part of the most efficient, most affordable and the most effective builder support vehicles offered today. Leveraging the power of this partnership we will empower vendors and suppliers to develop even more powerful tools. Tailored to our specific needs, these new tools will further differentiate The Partnership in this crowded, highly fragmented and competitive market.

This unique partnership is…

… independent of any product manufacturer – PRO-Build can access AVID's knowledge and skill set without purchasing specific building product brands. AVID does not sell lumber, joists, or other building materials nor does AVID have financial relationships with any software developer, hardware provider or any building product manufacturer.

… independent of any singular platform – AVID will manipulate, utilize and/or standardize singular of multiple software and hardware platforms to maximize program performance, and minimize operating costs.

… flexible to meet all of PRO-Build needs – AVID designs will provide Retailers home plans, material lists and product specifications that are specifically created and linked to the SKU selection for each local market.

… not limited to structural products alone. AVID product specifications are NOT limited to only I-joists, beams and trusses. AVID custom product specifications include windows, siding, roofing, flooring, sheet rock, hardware, trim, stone, brick, and more.

… providing PRO-Build with instant expertise and market differentiation – AVID brings expert design services, knowledge, local promotions and personal support services to PRO-Build without hiring and training additional staff and employees.

Our customers will take full advantage of developing Building Information Modeling ("BIM") technology. Our partnership will link design, engineering, marketing, production and supply together like never before. Now is the time to start a new partnership and lay the foundation for a truly ground breaking industry offering. Now is the time for AVID and PRO-Build.

References to some third party providers are made in this presentation. This reference should provide some insight into the role these companies play in this program.

BuildStar® is a software developer that sells software to companies like AVID. Their online based programs help builders track every aspect of a building project.

KeyMark® Enterprises is a software developer that sells software to companies like AVID. Their software takes 2-dimensional architectural drawings and converts them into virtual models used for structural analysis.

Planswift™ is a software developer that sells software to companies like AVID. Their software uses 2-dimensional drawings to create accurate take offs of building materials.

AVID Home Studios™ is a service provider to residential builders. AVID provides products and services to home builders that improve their business efficiency and profitability.

Just like a contractor who uses a forklift, a ladder and a hammer to build a house, AVID uses products like Keymark, BuildStar, Planswift and SoftPlan to support builders. These tools, managed by the AVID in-house design staff and supported by AVID's local Market Managers, provide personal and customized services to residential home builders across the US.

BIM – BUILDING INFORMATION MODELING

BIM is an acronym for Building information modeling. BIM is not one thing but a concept focused on efficient design. BIM describes design much like CAD (Computer Aided Design) described it three or four decades ago. CAD encompasses a variety of software, hardware, techniques and languages that took the traditional drafting tools (pencils, rulers, t-squares, etc.) and automated their use in a computer. This allowed designers to be more efficient. Now, BIM is attempting to bring all of the information used in the design of a building and bring it together on one platform to make the entire project design more efficient. BIM is attempting to use the information developed by traditional tools like CAD, computer modeling, wind load analysis, structural analysis, environmental databases, etc. and integrate into one manageable design system.

This rudimentary example will serve as a good analogy.

A client hires a designer to design a circle between two squares. A traditional designer would use a t-square, a triangle and a compass to draw two squares and circle. With the advent of computer aided design (CAD), a more modern designer would access a Unix based computer with the latest AutoDesk® product, find preloaded circles and squares and paste them into an electronic art board. The design would ultimately look like this:
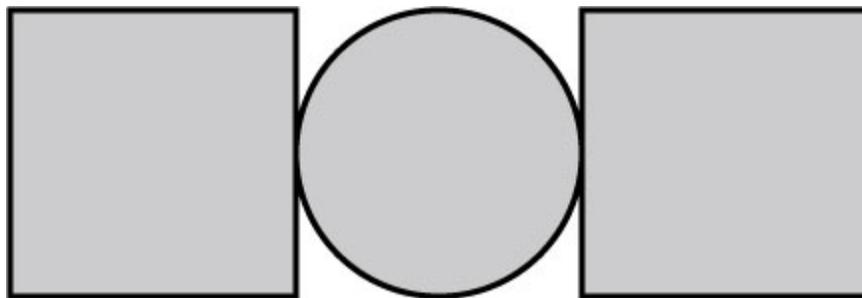
But in the BIM world, the process is a bit different. First, a project team will collaborate on every aspect of the design. They will access building codes to realize that circles cannot be built in this particular seismic zone. Instead, circles must be built out of a series of joined lines. They will reference solar orientation data and energy codes understanding that only 50% of the circle can be exposed directly to the exterior. They will reference area wind loads and deduce that only straight lines (not arcs) can be used to build the circle. Reviewing product data from *ACME Straight Line Mfg. Ltd*, the team discovers that straight lines cannot be cut and are available in only one length. The team realizes these restrictions will cause the circle to violate the two squares. They access a database of square properties. *Square Mfg. LLC* specifications state that squares can only be cut by specialized equipment made in Iran. Due to national security issues, this equipment is not allowed to be imported into the US. The database recommends another company that offers small, medium and large squares along with custom triangular shapes. All of this information - readily available during the design phase - leads our BIM project team to a design like this:
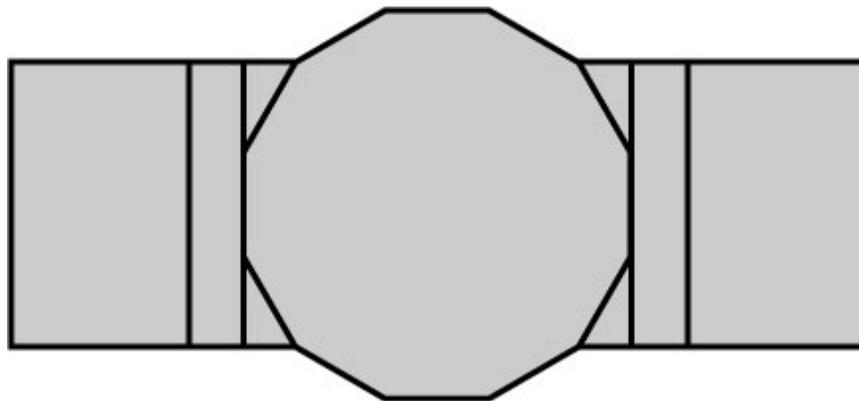
This example doesn't demonstrate that without BIM our original design team could not create the same design as the BIM team. On the contrary - the original design team would eventually create the exact same design. But, that final design would come after many revisions requiring considerably more time and costs. BIM allows design professionals to access information on every aspect of a construction project from the very beginning of the design phase. The information, stored in a database of virtual objects, allows designers to create a structure that can be built effectively and efficiently by eliminating errors and costs associated from the lack of adequate data.