



QUALIFICATIONS



Solving Today's Building Challenges

infosbs@shellbuildingsystems.com
www.shellbuildingsystems.com

COMPANY PROFILE

Founded: 1972

Locations: **Corporate Office**
1340 Bollinger Canyon Rd.
Moraga, CA 94556 USA
T 925.376.0881
C 925.997.0282

Professionals: 8

Advisory Panel: 8

Affiliated Partners: 6

Building Products: Non-Combustible Exterior Insulated Sheathing
Non-Combustible Post & Beam Wall Assemblies
OSB Structural Insulated Panels | Continuous Insulated Panels
Exterior Flat & Tapered EPS Roofing Insulation
Exterior EPS Continuous Insulation
OSB 'STC' Structural Insulated Panels Wall Assemblies

Services: Distribution of Premanufactured Building Assemblies
Cost Comparison Analyses of Construction Methods
Technical Product Assistance | Support
'Total' Shell Framing Packages
Building Product-Related Structural Design & Engineering
Drawing Conversions to Pre-Engineered Building Systems
Shop Drawings for Pre-Engineered Building Systems
Product Manufacturing & Fabrication (In Plant)
Installation and Training | On-Site Field Supervision
Feasibility Studies | Implementation Plans for Advanced Manufacturing Technologies
Installation and Operations for Advanced Manufactured Technologies
Educational Presentations

Professional Affiliations: Build It Green
U.S. Green Building Council (USGBC)
Structural Insulated Panel Association (SIPA)
Energy Star

Project Focus: Multi-Family For-Rent & For-Sale | Student Housing
Commercial Office & Retail | Industrial | Wineries
Resort Residential | Hospitality Accommodations | Restaurants
Education | Learning Centers | Day Care
Health Care | Medical Clinics & Offices | Health Clubs
Institutional | Government | Public Works
Recreational Centers | Community Clubhouses
Custom & Spec Residential | Single-Family Homes | Condo Mapped SFD
Low-Cost, Affordable Housing

COMPANY DISTINCTION

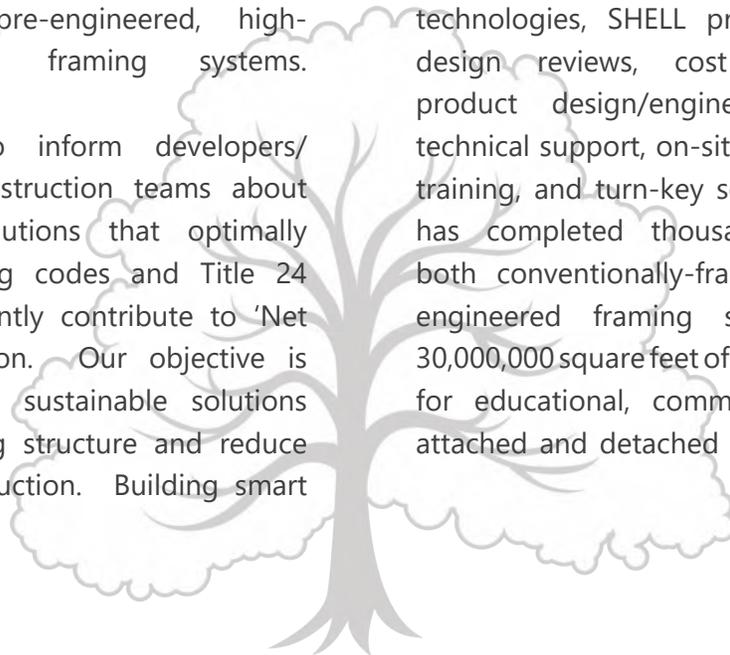


Committed to advancing the sustainability of new and renovated projects, SHELL Building Systems has been at the forefront of the green movement since 1972. With over 40 years vested in sustainable construction solutions, SHELL has vast expertise in the beneficial properties and specification values of many green building products, particularly pre-engineered, high-performance structural framing systems.

Our approach is to inform developers/owners, design and construction teams about sustainable building solutions that optimally exceed CalGreen building codes and Title 24 regulations, and significantly contribute to 'Net Zero Energy' consumption. Our objective is to identify and provide sustainable solutions inherent in each building structure and reduce the 'total' cost of construction. Building smart

the return on investment, decreasing life cycle costs, increasing profitability, attracting investors, and strengthening market and exit strategy advantages.

A recognized leader in the consultation, distribution and implementation of structural green products and pre-engineered building technologies, SHELL provides energy-conscious design reviews, cost comparison analyses, product design/engineering, shop drawings, technical support, on-site supervision, installation, training, and turn-key services. The SHELL team has completed thousands of projects using both conventionally-framed methods and pre-engineered framing systems including over 30,000,000 square feet of structural insulated panels for educational, commercial, government, and attached and detached residential developments.





COMPANY PRINCIPAL & EXPERTS



Gregory L. Koepf
Principal
CEO/President

Greg has plus 40 years of extensive construction, development and construction management experience. As a company owner and consultant, he has managed, constructed and/or supervised over \$850M in major building projects including large-scale apartments, mixed-use, high-rise and single-family homes using both conventional and pre-engineered building methods. Greg was selected by World Bank for the 'Syoy Dom – Own House' Humanitarian Program to install manufacturing facilities and establish businesses in the wood products and component housing industries to provide structural insulated panels (SIPs) for the construction of 5,000 attached and detached affordable housing units in Far East Russia. After transferring these advanced technologies to the region, he set-up two more SIP manufacturing plants in the Ukraine and Slovakia.

Greg is responsible for the day-to-day operations, new building product lines, cost estimates and analyses, technical support, specifications, prototype construction, product quality assurance and installation quality control. In addition to earning a Bachelor of Science in Biology and minor in Business from the University of Berkeley, Greg has earned several Management Degrees in Construction. He is also a Board Member for a number of building product manufacturers.



GREEN BUILDER
2020 HOME OF THE YEAR AWARD
THE BEST OF GREEN BUILDING
PALO ALTO APARTMENT, CA

NAHB - BSC BUILDING SYSTEMS COUNCILS
2020 MULTIFAMILY DESIGN AWARD WINNER

SIPA (STRUCTURAL INSULATED PANEL ASSOCIATION)
2019 BUILDING EXCELLENCE AWARD
MULTIFAMILY - PALO ALTO APARTMENTS, CA



2019
BUILDING EXCELLENCE AWARDS
SIPA
17th ANNUAL
Multifamily
Palo Alto Apartments
Palo Alto, CA
Multifamily & Overall Commercial Winner
Submitted by: Premier Building Systems - Becky Susan
Designer: David Sadrack, Architect
Builder: Shell Building Systems
Engineering: Wright Engineers - Jordan Monroe
SIP Manufacturer: Premier Building Systems

THE SBS TEAM & AFFILIATED PARTNERS:

Structural Engineers:

- Humberto Hassey, P.E.
- Brian Von Allworden, P.E.
- Joe Pasma, P.E.
- Brandon Helms, P.E.

Technical Product Advisors:

- Timothy Faust, MagBoard
- Bob Bach, Insulfoam
- Phil Ligon, Premier SIPs
- Stan Field, Architect
- Richard Chase, Rok-On

Development & Production:

- Gordon Ritchie, MagBoard
- James Hodgson, Premier SIPs
- Don Fisher, Yadam Technology
- Eric Boyenga, Consultant
- David Chase, Rok-On

Construction & Technical:

- David Barbosa, GC
- Steve Childers, GC
- Tom Geiger, Consultant
- Plant Construction
- Michael McCarthy, Consultant



COMPANY EXPERIENCE

SHELL Building Systems (SBS) is a comprehensive building resource company that specializes in the best sustainable product and service solutions the industry has to offer. With decades of industry experience and a proven record of achievements, SBS offers product design, engineering, fabrication, distribution, training and installation for high-performance building technologies needed to erect and close-in structures. Of particular importance is our plus 40 years of extensive knowledge with framing technologies, particularly all forms of insulated structural panels and sheathing.

Founded in 1972, with offices in Northern and Southern, California, SBS has worked with developers, public agencies, architects, structural and MEP engineers, and general contractors, both domestically and in other countries, to educate them about state-of-the-art building technologies, help solve their unique project needs and provide them access to world-class products. As an OEM distributor, advisor and installer of building systems, we have served markets worldwide including the set-up of manufacturing facilities to bring advanced building technologies and skills to other regions.

As a leader in the industry, our clients and their consultants work directly with SBS experts, who possess firsthand knowledge of framing, construction, project and construction management, development and structural engineering. This expertise is further supported by a team of

specification experts, technical product advisors, and other as-needed resources. Collectively, SBS can undertake projects from design through installation, as well as manage the critical path timelines and issues of projects. Uniquely, our capabilities may be customized to address our clients' specific project needs as well as the needs of their project team.

SBS focuses on state-of-the-art sustainable building products and systems that are 'tested' and 'proven'. Today, the efficiency and predictability of construction, the close-in time to build, the savings of reduced labor and extra steps, and the ability to offer our clients energy-efficient and 'sustainable' building systems are not only smart, but a necessary part of reducing the total cost of construction and lifecycle operational costs, and increasing profits.

With licensed general contractors, our staff experience spans both the conventional and pre-engineered structural methods of construction, making it an easy professional assessment that high-performance, pre-engineered structural framing systems are simpler, stronger, and more superior and cost-effective. Focused on client success, SBS continues to identify other building product solutions that respond to ever-increasing building code standards and energy regulations, while providing our clients with measurable, value-added results and cost-saving advantages.

ADVANCING SUSTAINABILITY

Sustainable design is a philosophy and practice in which services, products and expertise contribute to social well-being and make sound economic sense with negligible impact on the environment. It cannot be categorized as the newest 'trend'. In today's environment, sustainability is a way of life and it plays a significant role in how we live, work, develop and build; as well as how and what we buy. It is quickly becoming a key factor in our personal buying decisions. In fact, as one developer stated it, "energy efficiency is becoming the new granite countertop." Sustainable design is a growing expectation and, soon, it will be the norm in everything we do.

Although inroads have been made to deliver sustainable developments, the construction industry has been resistant to change. In today's highly competitive construction environment, there are alternative building options that provide superior building quality, quicker timelines, less labor, reduced waste and greater cost-effectiveness. These building options also offer a better living environment. Each project being uniquely different, every option should be explored.

Going Green isn't just about saving the planet or hopping on the newest trend. It's about saving the environment for future generations. To achieve this end, each project requires informed decisions and collaboration. Not only is Green then possible, so is improving the Bottom Line.

SHELL Building Systems is dedicated to informing and assisting project owners, public agencies, design consultants and the construction industry about sustainable building technologies that best suit their project. More often than not, the design team, general contractor and/or construction manager makes these decisions on the Client's behalf; however, the best building solutions are informed ones, achieved through a collaborative process that includes the client in the decision-making process.

After all, those decisions affect their project's 'total' construction and life cycle costs, financing options, and marketable value. Challenged with increasingly stringent building codes and energy regulations, the Client should be as informed about sustainable services and products as their project team. **SHELL Building Systems** is dedicated to delivering practical and profitable solutions that focus on the Client's specific project objectives including their Bottom Line.

"My fascination with sustainable building products stems from my collegiate studies in biology, and an underlying concern that our world's eco system should be protected. Although biology and my chosen field of construction are adverse practices, it is the foundation of my initial interest and involvement with high-performance, pre-engineered systems 28 years ago. This simple, sustainable and sophisticated means of construction has prov its value to my Clients around the world. It is understandable why structural insulated panels are becoming the framing method of choice.

I am excited about the future of sustainable design and construction. When methodically implemented as early as project inception, the greatest benefits will be realized."

**Gregory Koepf, CEO / President
SHELL Building Systems**



BUILDING AWARDS



**GREEN BUILDER
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THE BEST OF GREEN BUILDING
PALO ALTO APARTMENTS, CA**

**NAHB - BSC Building System Councils
2020 Multifamily Design Award Winner**

**SIPA (Structural Insulated Panel Association)
2019 BUILDING EXCELLENCE AWARD
MULTIFAMILY - PALO ALTO APARTMENTS, CA**

Solving Today's Building Challenges

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One for All

It's the same shade of green living, no matter where you reside in this upscale, multi-lifestyle complex.

BY GREEN BUILDER STAFF

IF ONE GREEN HOME is good, multiple green structures must be great. That's the crux of the housing at 430 Forest Avenue—a.k.a. "The Palo Alto Apartments"—a series of net zero residences in the heart of downtown Palo Alto, Calif.

All 13 dwellings—a penthouse, two townhouses and 10 apartments—were designed to provide a positive impact on residence health while promoting renewable, clean energy, according to project developers.

The 430 Forest Avenue project was designed and constructed by Shell Building Systems, architect David Solnick and developer Prabhas Kejriwal of Sageleaf Forest, LLC.

The client, meanwhile, wanted zero-energy and sustainable design elements to gain LEED Platinum certification (which it ultimately did). This commitment is also exemplified by the project team employing CA Green Building Code Tier 2 Compliance, according to Palo Alto Apartments builders.

"Environmental and energy modeling was critical given the building's design with massive floor to ceiling windows in many units," notes James Hodgson, general manager of Premier Building Systems, the provider of structural insulated panels (SIPs) used in the project.

The end result was a very green series of apartments, indoors and out.





Cool roof.

The complex's white, reflective PVC roof helps with indoor climate control during the area's high-heat summers.

Advanced glazings.

High-efficiency windows offer extensive natural lighting.

Six-inch SIPs.

Thicker-than-standard structural insulated panels (SIPs) keep each unit's building envelope exceptionally airtight.

Aluminum cladding.

Siding on the Palo Alto Apartments is wood grain and made from recycled aluminum.

Porous driveway.

Permeable pavers enable rain water to pass through the surface, reducing runoff and helping to keep contaminants out of groundwater.

CREDIT: DAVID SOLNICK



Room with a view. Dining areas are naturally lit as much as possible, courtesy of numerous extra large, high-efficiency glazed windows and a brightly colored interior.

CREDIT: DAVID SOLNICK

FROM THE JUDGES

"This gorgeous project shows that efficiency can be beautiful. The high design of this project didn't get in the way of lofty LEED Platinum goals."

GREEN ON THE INSIDE

Multi-story building and extreme sustainability throughout every component required extensive planning and systems design. In addition, programmable smart home and a wide array of sustainable elements are central to the project's luxurious living, comfort and day-to-day conservation.

The Palo Alto Apartments' green status

starts with its six-inch SIPs, which Shell Building Systems President Greg Koepf says are "the foundation for the project's efficiency and structural integrity."

From there, there is a micro-zoning high efficiency HVAC system with heat pump, all-LED high-efficiency lighting when needed—the natural day variety is emphasized as much as possible—high-efficiency glazed windows, and video monitoring in common areas throughout the all-electric home.

GREENER ON THE OUTSIDE

Meanwhile, the structure's Modern California exterior character, and transitions of scale and materials are compatible with the area's diverse design and historical nature.

A subterranean garage enabled design of a low-profile building mass that mitigates loss of natural light on adjacent neighbors' properties. It also frees up space to create building undulation for architectural interest and give room for design that embraces ample natural light, developers

note. Also, each unit has its own Level 2 electric vehicle (EV) charger if—and when—it is needed.

A long-lasting PVC white reflective roof includes a photovoltaic system that produces 100 percent of the structure's projected energy use.

Permeable Calstone pavers allow movement of storm water through the surface, reducing runoff and filtering contaminants before it enters groundwater.

And, greywater plays a large role in the building's green status. Recycled content is used for landscaping; toilets will soon be plumbed for its use during flushes.

Project Stats

NAME: Palo Alto Apartments, Palo Alto, Calif.
BUILDER: Greg Koepf, Shell Building Systems
ARCHITECT/DESIGNER: David Solnick, Architect
DEVELOPER: Prabhias Kejriwal, Sageleaf Forest, LLC
PHOTOGRAPHER: David Solnick, Architect

www.greenbuildermedia.com

Key Components

APPLIANCES: Heat pump water heaters and clothes dryers

BUILDING ENVELOPE: Shell Building Systems

ELECTRICAL: All-electric appliances; a Level 2 electric vehicle (EV) charger for every unit to fully power electric cars

EXTERIOR FINISHES: Wood grain, high-definition, digital inkjet-printed recycled aluminum siding, Stuc-O-Flex elastomeric acrylic finish

HOME CONTROLS: Samsung SmartThings controller; occupant-controlled lighting in all common areas and inside units

HVAC/DUCTS: Micro-zoning, high-efficiency HVAC system with heat pump (locked out when windows open)

INSULATION: Structural insulated panels (SIPs) by Premier Building Systems

LANDSCAPING: Recycled greywater used for landscaping

LIGHTING: All-LED high-efficiency lighting; occupant-controlled lighting in all common areas and inside units

PAVERS: Permeable Calstone pavers

PLUMBING/PLUMBING FIXTURES: Plumbed for toilet flushing using greywater (addition in the future)

RENEWABLE ENERGY SYSTEMS (SOLAR, WIND, ETC.): Photovoltaic system produces 100 percent of projected energy

ROOF: Long-lasting PVC, white reflective roof

TELECOMMUNICATIONS: Video monitoring in common areas

WATER FILTRATION: Permeable Calstone pavers allow movement of stormwater through the surface

WATER HEATING: Heat pump water heaters and clothes dryers

WINDOWS, SKYLIGHTS, PATIO DOORS: High-efficiency glazed windows

OTHER:

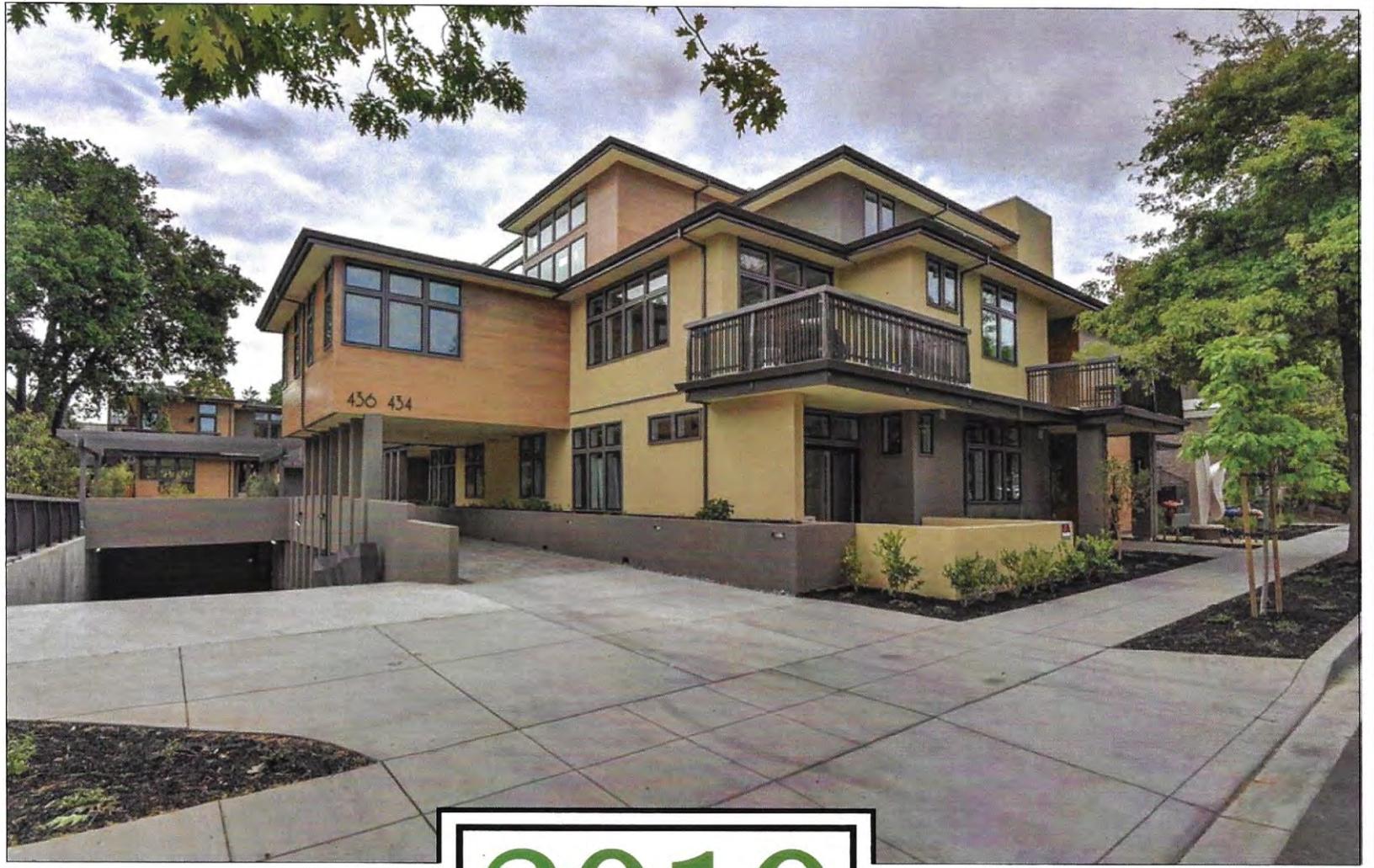
- Stuc-O-Flex Water Way Rainscreen Drainage Mats to facilitate drainage/air flow induction cooking
- Cellular PVC trim (recyclable)



Neighborly appeal. Developers designed the Palo Alto Apartments to minimize loss of natural light on neighbors' properties while enhancing their own.

CREDIT: DAVID SOLNICK

www.greenbuildermedia.com



2019



Multifamily

Palo Alto Apartments

Palo Alto, CA

*Multifamily & Overall Commercial
Winner*

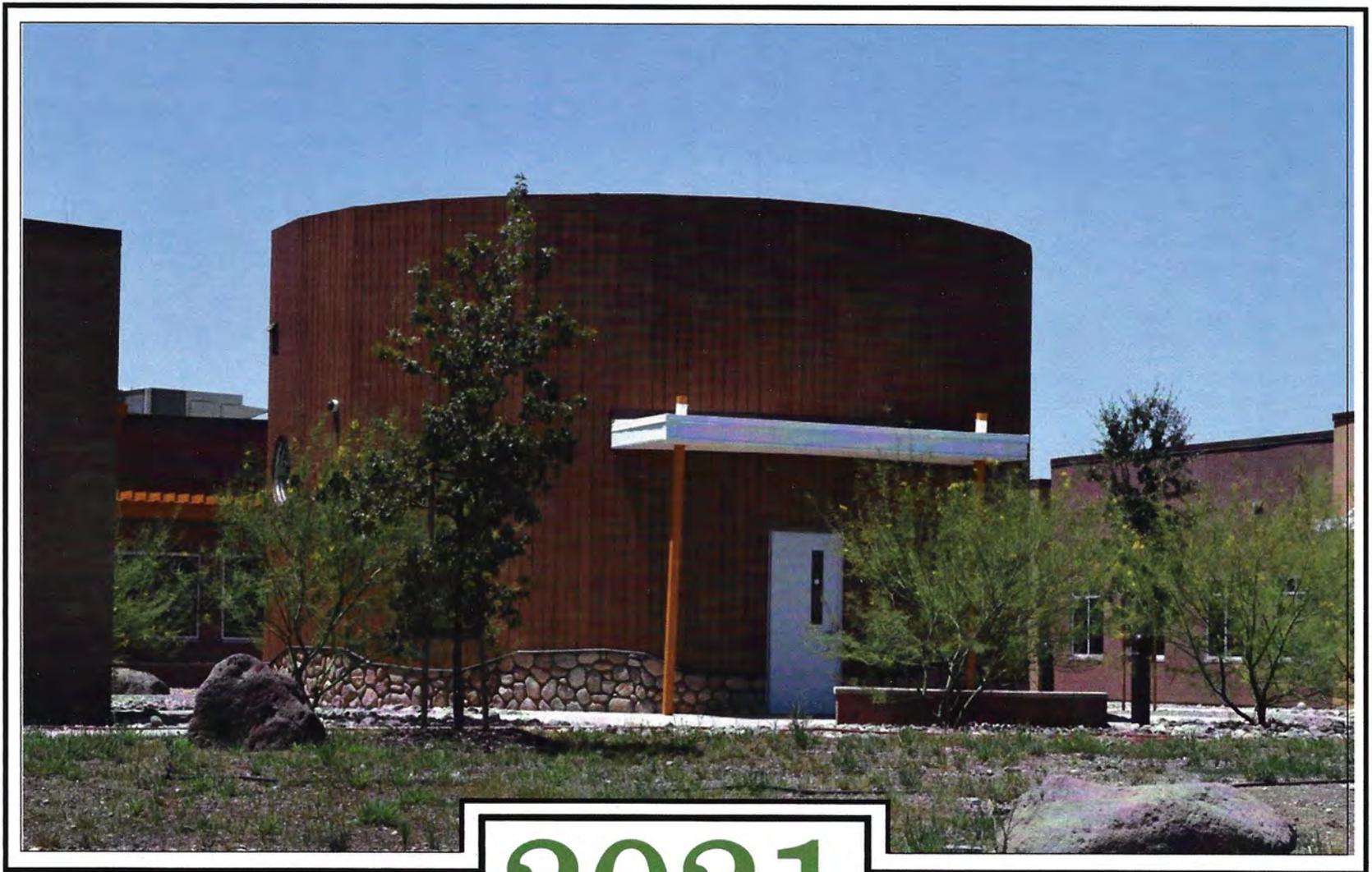
Submitted by: Premier Building Systems – Becky Susan

Designer: David Solnick, Architect

Builder: Shell Building Systems

Engineering: Wright Engineers - Jordan Monroe

SIP Manufacturer: Premier Building Systems



2021



Commercial/Industrial/Institutional Buildings over 10,000 sq. ft.

NCYRTC Building A

Davis, California

Winner High Performance

SIP Treatment Center Davis CA

Submitted by: Premier Building Systems – Laurie Miller
Designer: Johnson Smittipong & Rosamond Associates
Builder: Greenberg Construction/Shell Building Systems
SIP Manufacturer: Premier Building Systems

Single Family Homes over 3,000 sq. ft.

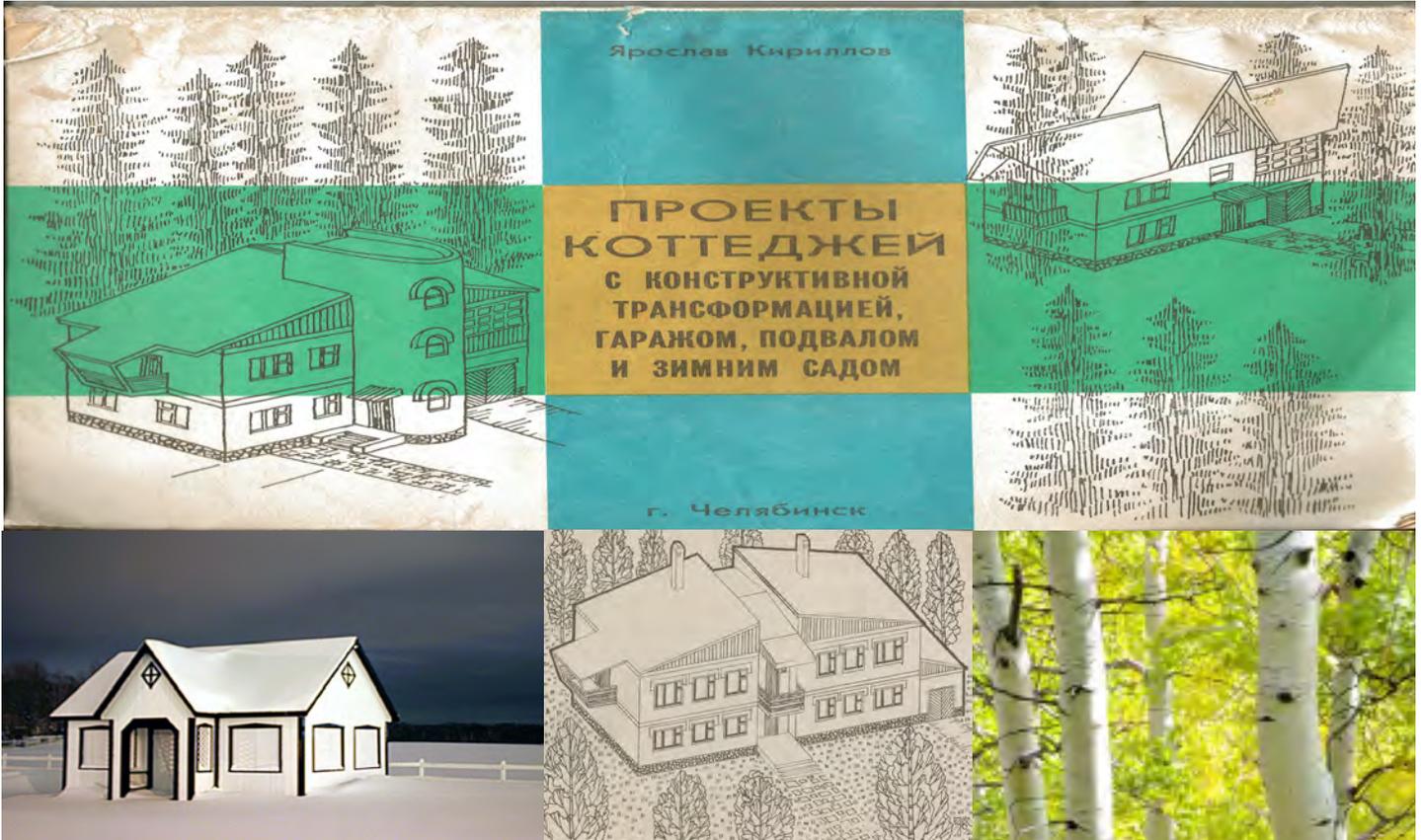
Sommer Residence – Santa Rosa, California

Select SIPs
SIPA
Structural Insulated
Panel Association
Look Book
2021



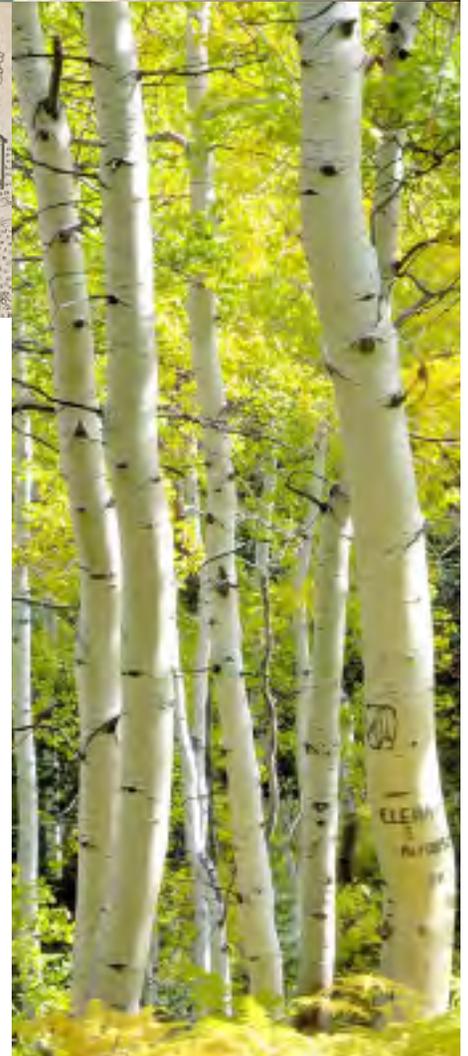


SYOY DOM - OWN HOUSE DOM DLYA VASHEY SEMIY - HOUSE FOR YOUR FAMILY Primorski Krai Region, Russia Far East



East Forest Production Company (EFPC), a Russian-American joint venture, was formed to install manufacturing facilities and establish businesses in the wood products and component housing industries in the Russian Far East. EFPC's purpose was to transfer advanced manufacturing technologies to the region, upgrade worker skills, conduct profitable new businesses designed to realize maximum economic value from the region's timber resources, and fulfill necessary housing programs. EFPC's emphasis on "value added" (processed and/or manufactured) wood products represented a marked departure from the traditional practice of exporting whole logs.

After completion of a Russian-contracted Feasibility Study, EFPC received widespread support and was selected by the government to supply and build houses in Far East Russia for "Dom dlya vashey semiy / i.e. House for Your Family" and "Syoy Dom – Own House." Humanitarian Funding was received to establish manufacturing facilities and operations to accomplish a 5,000-unit attached and detached housing program, build and remodel schools to upgrade educational programs, implement forest resource management and reforestation programs, and increase direct and indirect jobs. Upon Program completion, the American interest in EFPC was transferred to Russia.



SUSTAINABLE INVESTMENTS





STRUCTURAL INSULATED PANELS (SIPS) An Advanced & Pre-Engineered, Type V Framing System

SIP-Built Single-Family Residences

- Aalfs Residence; 8,767 sf
- Cox Residence at Ft. Bragg; 8,854 sf
- Danielson Home; 14,456 sf
- Dedlow Residence; 8,676 sf
- Dottle Residence; 9,787 sf
- Ellermeyer Custom; 9,787 sf
- Enclave at Cypress Grove; Clarum Homes
- Freestone Ranch Custom; 6,700 sf
- Gunter Residence; 14,650 sf
- Hansen Lane Zero Energy, Clarum Homes
- Koo Residence; 3,382 sf (UC)
- Lehmkuhl Residence; 6,798 sf
- Massey Residence; 2,200 sf
- Menlo Park Passive House; Clarum Homes
- Noland Residence; 7,357 sf
- Northwest Timberframe Net Zero House
- Pacifica Custom; 4,500 sf
- Palmilla La Quinta; RTJ Homes
- Rosia Custom; 18,500 sf
- Sun Savvy Net Zero Energy Homes
- The Sungazing House; 3,720 sf

The SIP Advantage for Owners / Builders

- Stronger than conventional framing
- Less structural hardware
- May reduce foundation cost (concrete slab)
- Faster rough-in framing and electrical
- Panels are UL-approved and pre-chased
- Exceeds CalGreen Building Codes & T24
- Provides a continuous insulation barrier
- 60% more energy efficient than 2x6, R19 construction
- Tighter building envelope (15X)
- No blower-door test required
- Healthier indoor environment
- Reduces HVAC system size & efficiency
- Energy conservation savings up to 65%
- Energy Star approved product
- Straight walls provide faster finish work
- Precision of diaphragm openings allows for faster window/door/trim installation
- Reduces framing scrap & waste up to 70%
- Significant reduction of time & labor
- Fewer trades to coordinate
- Reduce 'General Conditions' up to 30%
- Faster construction lowers 'debt service'; reduces risk of 'late' penalties
- Life cycle savings offers potential to negotiate better lending terms
- If solar, panel requirements are less
- Homeowner may occupy their home sooner
- 20-Year Product & Performance Warranty



Photo Courtesies: Premier SIPs & Shell Building Systems



THE ENCLAVE AT CYPRESS GROVE Seaside, CA



Home Builder: Clarum Homes
 Project Type: SF Development
 Units (Phase 1): 10
 Square Ftg: 2,775 - 5,000 SF
 Price: Start at \$1,095,000
 Architect: Environmental Innovations
 Structural Engr: Max Cheng & Associates
 SIP Provider: Premier SIPs
 SIP Use : 6" Panel Walls
 8" Panel Roof

Photo Courtesy: Premier SIPs

"SIPs are so significant to airtight construction that EnergyStar® has waived the requirement for blower door tests for SIP construction across the U.S."

**-Energy Star for Homes
 U.S. Environmental Protection Agency**

The Enclave is the first residential phase of Cypress Grove, a 400-acre planned, residential golf resort community on the Bayonet and Black Horse Golf Courses on the Monterey Peninsula. A private, gated community, the Enclave will be complete with 29 custom residences, 125 single-family homes featuring panoramic golf and Monterey Bay views, 170 condominium units and a 330-room luxury resort hotel.

These 'Net Zero' homes are designed with exquisite architectural detailing and gracious interior appointments. Residential neighborhoods built by Clarum Homes come standard with sustainable features that result in energy-efficiency, indoor air quality, water conservation, earth-friendly building materials and added convenience. Of particular note is Clarum Homes' commitment to build with a tight-building envelope and high-performance insulation that reduces energy consumption by up to 65%. The use of SIPs reduces unsightly solar panel requirements and assures stable indoor temperatures for optimum comfort.



HILLSIDE HOUSE Portola Valley, CA



Architect: fieldARCHITECTURE
Structural Engr: Peter Boyce
SIP Provider: Shell Building Systems
Tech Support: Shell Building Systems
Installer: MCH Construction
GC: MCH Construction
Sq. Ftg: 2,142
SIP Use: Exterior & Interior Walls
 and Roof
of SIPs: 6,128
Photographer: Bruce Damonte

Situated in a pocket of classic oak woodlands, the Hillside House is an extensive residential expansion for a home owned by an energy consultant. The design embraces the site's natural slope with rooms and stair corridors oriented toward views. Structural Insulated Panels (SIPs) not only provided the structural integrity and energy efficiency sought by the owner and architect, this pre-engineered framing system achieved clean and elegant building forms and lines, and allowed for exterior and interior finishes that are almost impossible to obtain in conventional framing. SIPs worked in concert with steel beams and structural supports, and provided embed cavities to hide specific conditions to gain certain design effects. The roof panels were tapered to provide a smooth slope to the roof barring any 'stepped' roof design or interior ceiling height changes. Rain gutters were channeled into the SIPs to remove their visibility. Extensive use of can lighting required special chase fabrication into the roof panels to accommodate fixtures. The expertise of SHELL Building Systems with SIP design, engineering and fabrication was the most comprehensive residential project done by any SIP manufacture to date.



SUNGAZING HOUSE
Park City, Utah

LEED Platinum, Net-Zero Energy



Architect: Jean-Yves Lacroix
 Structural Engr: Jarratt Engineers
 Environmental Engr: Heliocentric
 GC: Tall Pines Construction
 SIP Provider: Premier SIPs
 Sq. Ftg: 3,800
 SIP Use: Exterior Walls and Roof
 Type of SIPs: 12" thick walls & roof plus 4" EPS on roof

Energy-Efficient Building Standards Criteria:

- The Passive House
- 2010 Green Builder Media's 'Green Home of the Year'
- Net Zero Energy
- LEED Platinum for Homes
- NAHB Emerald

Photographer: Jacob Kauppila

At an altitude of 6,900 feet on the southern slope of the Wasatch Mountains, the Sungazing House experiences average annual temperatures of 35 degrees Fahrenheit and frequent sub-zero weather. Inspired from the ambitious energy standards of the Passive House, the owner challenged his architect to combine the highest level of energy efficiency with luxury and livability. The result was a 3,800 SF home that provides consistent indoor temperature comfort and generates more energy than it uses.

After integrating site orientation and plan design, key design features consisted of an airtight building envelope using 12" structural insulated panel (SIP) walls, and a 12" SIP roof with 4" of added EPS. After controlling the interior environment and reducing the HVAC equipment by using SIPs, other features included passive solar heating, custom-tuned and insulated Serious (Series 925) windows strategically placed for optimal solar collection, glazing overhangs, a Heat Recovery Ventilator (HRV), an array of rooftop solar to generate electricity and heat water, and Energy Star rated appliances. Due to the speed of SIP construction that reduced time, labor and waste, the cost savings were allocated toward these green features.



CLINTON PARK ROW HOME
San Francisco, CA



Project Type: Urban Infill, SFD Condo
Building Type: 4-Levels Living
Open Space: Rooftop Garden
 Side Entry Courtyard
Units: 1
Square Ftg: 1,624
Architect: Albert Costa Architect
Structural Engr: FTF Engineering Inc.
SIP Provider: Shell Building Systems
Installer: Shell Building Systems
Manufacturer: Premier SIPs
SIP Use: Walls / Roof / Floors
of SIPs: 2,814 S/F

Located on a downhill, one-way street in the Mission District of San Francisco, this four-story modern-style row home is wedged into an infill lot with architecture abutting the sidewalk and its neighbor to the west. Structural insulated panels (SIPs) made it easier to apply exterior finish materials before standing the wall panels on the blind side versus conventional methods that would have been more difficult, and framed sections heavier to lift and set. The narrow site and street prohibited a staging area for materials, yet SIPs allowed for immediate construction as panels were offloaded and remaining panels were easily stacked in order of construction on the building footprint versus huge quantities of lumber requiring cuts. A street encroachment permit was needed for only less than half a day. Building with SIPs significantly increased the speed of construction to two weeks versus months. Contrary to conventional building methods, using prefabricated SIPs reduced noise and decreased the duration of construction activity.

"Structural Insulated Panels provide the optimum solution for city revitalization projects, requiring no staging area. Approved for Type V construction and Seismic Zones A - F"



STRUCTURAL INSULATED PANELS (SIPS)
 An Advanced & Pre-Engineered, Type V Framing System



SIP-Built Multi-Family Projects

- Flagstaff Senior Meadows
- Lofts at McKinley
- Grandfamilies Place of Phoenix
- View Point Senior Apartments
- Smith Williams Affordable Senior Apartments
- Senator Richard Bryan Senior Apartments
- Sarann Knight Affordable Apartments
- Wind River Hall Student Housing
- Magnolia Court Live/Work
- Filbert Court Lofts
- Ft. Lewis Military Barracks
- Ft. Wainwright Military Housing
- U.S. Army Alaska
- Medical Staff Quarters
- Puyallup Tribe Housing
- Northwood Condominiums



The SIP Advantage

- Stronger than Conventional Framing
- Significant reduction of Time & Labor
- Reduces Framing Scrap & Waste up to 70%
- Can reduce 'General Conditions' by 30%
- Faster Construction lowers 'Debt Service' reduces risk of 'late' financing penalties
- Exceeds CalGreen Building Codes & T24
- Surpasses Energy Star efficiencies
- Energy Star and HUD Approved
- Tight building envelope
- Healthier indoor environment
- Reduces HVAC sizes; increases efficiencies
- Energy conservation savings up to 65% (*)
- If solar, panel requirements are less
- Less structural maintenance costs
- Lease earlier with faster construction
- Life cycle costs are significantly reduced
- 20-Year Product & Performance Warranty



Photo Courtesy: Premier SIPs & Tofel Construction



SENATOR RICHARD BRYAN SENIOR APARTMENTS
Las Vegas, NV



Project Type: Affordable Senior Apartments
Project Size: 120 Units and Clubhouse
Project Cost: \$13,409,085
Developer: Community Development Program Center of Nevada
Architect: Clifton Marshall Architects
SIP Mfg: Premier SIPs
Structural Engr: Flamar Engineering
Mechanical Engr: X-Nth, Inc.
Electrical Engr: X-Nth, Inc.
GC: National Construction Providers
Applications: 6" SIP Walls
Photo Courtesy: Premier SIPs

With the sharp rise in housing prices in 2006, the City Council of Las Vegas made it a priority to focus on new options of affordable housing in their community. One of several projects developed was the Senator Richard Bryan Senior Apartments. To address rent control and provide indoor living comfort for its senior residents, the developer made a conscious decision to use structural insulated panels (SIPs) for the project's exterior walls. The project was delivered in advance of its projected completion date, built under budget, and its operational costs are 30% less than anticipated.

The project is owned by the Senator Richard Bryan Limited Partnership, consisting of the Affordable Housing Program, Inc., a subsidiary of the Housing Authority of Las Vegas, and SunAmerica Housing Fund 1316, a Nevada limited partnership

FACTS:

- Lowers debt service due to faster construction
- Reduces risk of 'late' construction penalties
- Predictable framing avoids Change Orders
- May reduce General Conditions by 30%
- Energy consumption savings up to 65%
- Reduction of life cycle costs for increased profits



SMITH WILLIAMS SENIOR APARTMENTS
Henderson, NV



Project Type: Affordable Senior Apartments
Building Type: Type V; 3-Stories On-Grade
 Surface Parked
Project Size: 80 Units
Client: Community Development Programs Center of Nevada
SIP Provider: Premier SIPs
Architect: Winston Henderson
Engineer: Avant Engineers
GC: National Construction Providers
SIP Applications: 6" Panels - Exterior Walls
 10" Panels - Roof

Photo Courtesy: Premier SIPs

The Smith Williams Senior Apartment complex is comprised of three 3-story buildings with 80 one- and two-bedroom units that provide affordable living for low-income senior renters. A separate one-story structure provides a clubhouse, swimming pool and spa, weight room, movie room and library. Financed through a public-private partnership, the project is the Nevada Housing Division's first faith-based supportive housing tax credit project, however, any eligible person can rent an apartment regardless of beliefs. Reverend Sam Roberson, pastor of Henderson Community Baptist, was inspired to have his congregation sponsor the complex after a visit to Atlanta's historic Wheat Street Baptist Church. Relying on tax credits, this +\$20M senior living complex was financed largely through private lenders with participation from the city, county and the state/federal monies dedicated to low-income housing.

About SIPs:

A high-performance, framing system, Premier SIPs have been rigorously tested to exceed building code standards, and validate load charts and seismic design data. An ideal product for energy efficiency, extensive testing validates that SIPs create a tighter building envelope, exceptional IAQ and a healthier environment.

- CDPDN's 4th affordable project!**
- Installation = 37 Days (Closed In)!!**
- 65% More Energy Efficient**
- Waste Reduction**
- Less Time & Labor**
- Reduced 'Total' Construction Cost**
- Significant Operational Savings**



VIEWPOINT SENIOR APARTMENTS
 Prescott Valley, AZ



Initially proposed for family apartments, WESCAP Investments changed its project direction based upon market demographics and the overwhelming success of SunGate Villas, its 118-unit senior complex on an adjacent parcel west of the Viewpoint property. Located between Long Look Drive and Civic Circle, this five acre site is also near the Civic Center.

To be built in two phases, Viewpoint Senior Apartments caters to low- to moderate-income seniors and disabled persons. The first 50 units of this 102-unit LIHTC complex are complete and fully leased. The second phase of 52 units is awaiting release of tax credits. In addition to LIHTCs, Federal Community Development Block Grant monies were granted to the City of Phoenix and applied toward street extensions and additional access to the community.

While awaiting Building Department final approval, the developer made a late decision to build with pre-engineered structural insulated panels (SIPs). Structural design and conventional framing conversions were completed during excavation, and shop drawings were finished during the foundation phase. To address the schedule, blank panels were shipped to an adjacent site for fabrication. Using S-splines, wall spans were assembled in lengths up to 41' at the gables and raised into place for fast construction. Interior wall fabrication was also performed on-site.

- Project Type:** Affordable Senior Apartments
- Building Type:** Three-Story, On-Grade
- Project Size:** 102 Units (2 Phases on 5 AC)
- Client:** WesCap Investments
- SIP Mfgr:** Premier SIPs
- Architect:** Fergis & Harding
- GC:** View Builders, LLC
- SIP Applications:** Exterior SIP Walls
- SIP Installer:** Desert Verde Homes
- Completion:** Phase 1 - December 2011
Phase 2 - Early 2013

Photo Courtesy: Premier SIPs



WIND RIVER HALL STUDENT HOUSING
Rock Springs, WY



To meet steadily growing student housing demand, Western Wyoming College selected BKV Group to design an apartment-style residential life facility with contemporary amenities to meet student expectations. Configured in four-bedroom clusters with living room, kitchen, multiple station baths and storage, the project was designed to accommodate 150 beds and student service facilities.

Design elements, selection of building materials and installation procedures were considered early in the process to address the high level of abuse found in student markets, resulting in a building that is both practical and affordable. After a number of options were evaluated to reduce energy consumption and facilitate competitive pricing, it was decided to construct the building envelop and interior walls with structural insulated panels (SIPs). Using SIPs throughout the structure lowered repair costs from property abuse. The properties inherent in SIPs also decreased the cost of construction, reduced the construction schedule, allowed mechanical systems to be down-sized, and reduced energy consumption and associated lifecycle operation costs.

Project Type: Student Housing
Project Size: 48 Units; 28,000 SF
Client: Western Wyoming College
SIP Mfgr: Premier SIPs
Architect: BKV Group of Minnesota
GC: Kamerman Construction
Building Type: Type V; 4-Stories Over Podium
Beds: 150
SIP Applications: 6" Panels - Exterior Walls
 4" Panels - Interior Walls
 10" Panels - Roof

Photo Courtesy: Premier SIPs



JACOB E. MANCH ELEMENTARY SCHOOL (Phased Replacement Project) Las Vegas, NV



Challenges: After CCSD awarded the project in 2005, the construction cost estimates soared by approximately 1.5% per month. During the programming and preliminary design stages, the architect determined that materials customarily used by the District – primarily CMU’s and tilt-up concrete panels – was not financially feasible given the approved budget. CCSD sought a building solution that would reduce construction costs and heating and cooling demands, and mitigate jet aircraft noise transmission and attenuation from nearby Nellis AFB. There was concern that SIP unfamiliarity by the GC, and framing and MEP union trades, could affect the bids. Adding complexity to these challenges, CCSD needed the replacement school finished as quickly as was feasible to minimize disruptions to faculty and students still using the existing, adjacent school. Uniquely, the architect’s building design offered its own

SHELL Difference: Several local energy auditing firms revealed that SIPs would substantially reduce energy costs, and the size of HVAC systems and usage. The SHELL management team worked closely with project consultants to maximize the many inherent advantages of SIPs, review Preliminary Design Drawings, assess structural solutions and establish preliminary SIP building costs to compare with the CCSD’s typical building practices. It was determined that using SIPs for all exterior curtain walls and roofs would exceed the program criteria and save materials, waste, labor and time to considerably reduce the ‘total’ construction cost. SHELL worked closely with the GC to educate the trades and coordinate scheduling to take advantage of this pre-engineered structural system. With SHELL’s installation team on-site, the building envelope was completed in 47 days versus the scheduled 212 days, and the ‘total’ construction cost savings was almost \$2M. Today, CCSD reports that Jacob E. Manch Elementary School operates between 65 - 70% more efficiently than its other educational facilities.

Project Size:	68,000 SF (900 Students)
Budget:	\$20 Million
Construction:	Bearing Walls - SIPs Non-Bearing Walls - Light Gauge Steel Studs
Client:	Clark County School District
Architect:	Small Studio Architects - LV
Structural Engr:	Calder - Richards
SIP Consultant:	Shell Building Systems
Tech Support:	Shell Building Systems
GC:	Martin Harris - LV
SIP Mfrg:	Premier SIPs
SIP Application:	Exterior & Interior Walls; and Roof
# of SIPs:	2,250; 118,000 SF
Awards:	2010 SIPA Awards 'Best Green U.S. School Building Excellence Award
Completion:	Spring 2010



ADVANTAGES OF SIP CONSTRUCTION FOR SUSTAINABLE SCHOOLS



SCHOOLS ACROSS THE NATION SAVE TOTAL CONSTRUCTION COSTS AND SIGNIFICANT OPERATIONAL EXPENSES WHEN GOING GREEN WITH STRUCTURAL INSULATED PANELS!



The nation's largest green school district chose SHELL Building Systems for the Jacob E. Manch Elementary School. Using SHELL, their choice manufacturer of SIPs, SHELL successfully framed the school in record time (47 days) and under budget. Choosing SHELL Building Systems and their SIP manufacturer of choice made for a responsible green structure that carries a 20-year product and performance warranty, is better for the health of staff and students for many years to come.

Photo Courtesy: SHELL Building Systems

- **Energy Efficient & Cost Effective:** Reduce heating and cooling costs up to 85% for significant operational savings, which can be directed back to the school's operational budget for other needs
- **Healthy:** Better indoor air quality due to an airtight building envelope that contributes to a better learning environment and attendance rate
- **Comfortable:** Warmer in winter, cooler in summer, ideal controlled indoor environments for students and teachers
- **Easy to Operate:** Tight building envelope reduces HVAC mechanical equipment sizes and improves efficiency to reduce heating and cooling costs
- **Stable R-Values:** No thermal drift! Unlike other SIPs insulation, the R-Value of PBS' EPS insulating core will remain stable over the entire product service life, so a school's energy savings will be consistent year after year
- **Environmentally Responsible:** SIPs produce 30% less job-site waste than traditional construction, and substantially reduce heating and cooling costs over a school's life cycle (can amount to millions)
- **'Total' Construction Costs:** SIPs play a large role in managing capital construction costs. Schools built with SIPs provide a more efficient and systematic approach to building, significantly reducing the 'total' construction cost by way of time, labor, waste, general conditions, debt service and other direct costs
- **Construction Use:** Of Struc Grade One OSB, SIPs are used for structural shearwalls, roofs, curtain walls, and bearing and non-bearing interior walls



ADVANTAGES OF SIP CONSTRUCTION FOR SUSTAINABLE SCHOOLS

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STRUCTURAL INSULATED PANELS - THE MOST PRACTICAL PRE-ENGINEERED FRAMING METHOD FOR HEALTH, ENDURANCE, OPERATIONAL SAVINGS AND MORE

- **Stronger:** Exceptional proven product strength, much stronger than traditional framing methods. No need for a truss system.
- **Straighter:** A Product with predictable, engineered strength. Why settle for the imperfections of dimensional lumber?
- **Greener:** Manufactured from a fast-growing species produced for OSB, non-VOCs, indoor air quality, less waste and more!
- **Fast Close In:** Schools are framed in weeks, not months.
- **Top Code Reports:** The best building code reports in the industry; between SHELL Building Systems and its manufacturer, the best technical and design support is provided.
- **LEED Points:** Up to 23 valuable environmental design points through the standard in green certification, LEED for Schools.
- **Proven Performance:** Using SHELL's manufacturer of choice, their 25 years of SIP manufacturing provides confidence in product performance.
- **Warranty:** Peace of mind with a product warranty.

SCHOOL PROJECTS BUILT WITH SIPS:

- Thatcher School - Ojai, California
- Jacob E. Manch Elementary School - Las Vegas, Nevada
- American Heritage Academy - Arizona
- Zuni Christian Mission School - New Mexico
- Ojo Encino School - New Mexico
- Central Oregon Community College - Oregon
- Valhalla Elementary - Auburn, Washington
- Finn Hill Jr. High - Washington
- Lakeview Hope Academy - Washington
- South Kitsap School #13, - Washington
- Bertschi Elementary School - Seattle, Washington
- Wind River Hall at Western Wyoming College - Wyoming
- George Morgan High School - Alaska





SAN LUIS NATIONAL WILDLIFE REFUGE COMPLEX

Los Banos, CA



Funded by the American Recovery & Reinvestment Act, this SIP-built, environmentally-friendly, state-of-the-art facility is the first Less Than Zero Energy design within the U.S. Fish and Wildlife Service system. The building's close proximity to a substantial fault-line and a wetlands area with a high water table required an 18-inch thick, steel-reinforced 'raft slab' for the foundation system to allow the structure to 'float' in the event of a major earthquake. Approved for Seismic Zones A-F, SHELL's structural insulated panels have proven their structural integrity during severe earthquakes, including the magnitude 7.2 quake in Kobe, Japan. Carefully integrated passive solar and mechanical systems manage the indoor environment for occupant health and comfort. Seven roof monitors provide natural daylight and ventilations, as well as an optimally oriented support structure for the bulk of the Visitor Center's 55kW photovoltaic array. Some ecologically-conscious features of the facility include the use of recycled regional low-emitting materials, water-conserving fixtures, LED lighting, natural daylighting, passive heating and cooling, high albedo roofing, and alternative energy transportation.

Project Size:	17,000 SF
Client:	U.S. Fish & Wildlife Service
Funding:	American Reinvestment and Recovery Act (ARRA)
Architect:	Catalyst Architecture
Structural Engr:	MC2
GC:	West Coast Builders
SIP Consultant:	Shell Building Systems
SIP Application:	Wall Panels - 16,260 SF Roof Panels - 21,772 SF
LEED:	Seeking LEED Platinum 'A Less Than-Zero Energy Building'

Photo Courtesy: Catalyst Architecture



MgO BUILDING PROJECTS U.S. Owned



“With over 35 years of extensive knowledge using high-performance framing technologies, particularly all forms of structural insulated panels, MagBoard building products for construction surpasses any structural material I have encountered. Using MagBoard for construction offers optimal uses and has exceeded my expectations. As a licensed contractor, I haven’t come across any other building material with so many construction applications, plus a Sound Transmission Coefficient rating over 50 and non-combustible properties for use in Type I, II and V construction. Its structural strength for shear walls and reduction of labor steps for exterior insulation finish systems and interior finishes are revolutionary. Our resource partner, MagWall Building Systems, has mastered a homerun.”

– Gregory L. Koepf, President, SBS



MgO Projects:

- Attached and Detached Residential (low-income to high-end-projects)
- Schools, Commercial, Industrial, Institutional
- Hospitality Residences and Dining
- Renovation for All of the Above



MgO Products:

- Structural Panels - Shear Walls, Roofs, Floors
- Structural Boards - Exterior / Interior Sheathing
- Structural Boards - Foundations, Basements, Walls, Roofs, Fences and More
- MgO Exterior Finishes

SEVEN KEY ADVANTAGES:

1. Fast, Simplified Construction
2. Durable and Structurally Superior
3. Excellent Fire Performance
4. Well Insulated / Lower Energy Consumption / Lower Energy Costs
5. Full Range of ASTM Testing
6. Green Building Technology
7. Installed competitively - faster Construction cycle, lower labor costs, consistent quality, lower

ADVANTAGES OF MAGBOARD SHEATHING

- | | | |
|--------------------|--|---|
| • Non-combustible | • Inert no off-gassing | • Exceptionally strong |
| • Water resistant | • Silcate free | • Easy to build with |
| • Mold resistant | • Hyper allergenic hospital grade material | • Significant structural and assembly testing |
| • Bug resistant | • Green building material | • A ‘smart’ investment |
| • Impact resistant | | |

