



Snap-N-Lock
... and more

SALES OFFICES

CONTROLLED TEMP. UNITS

ENERGY EFFICIENT BUILDINGS

TICKET & VENDING BOOTHS

MULTI-UNIT CARPORTS

BUILDING ADDITIONS

CARWASH BUILDINGS

STOREFRONT CANOPIES

RESTAURANTS

UTILITY COVERS

MANUFACTURING STRUCTURAL INSULATED PANELS SINCE 1987.

WALKCOVERS & CANOPIES

This walkcover was an addition onto the Clearwater Marine Aquarium. The intent was to provide additional viewing area for the public to observe the marine life. After completion, the owner observed that the inside temperature of the upper level was at least 30% cooler. The cover blocks the windows from getting direct sunlight and reflects a high percentage of the sun's rays. The panels also provide continuous insulation, which reduces the temperature directly underneath the walkcover.



INPLANT OFFICES

Adding office space to any warehouse facility is quick and easy. The insulated walls make it the most comfortable place to be. An AC unit can also be added for additional comfort.



RESTAURANTS



The architect and contractor for this restaurant sure have a knack for capturing the theme of the project in the exterior design and carrying it all the way through to the interior decor. The brick and stucco give it an old time western flair and the wrought iron pistol shaped door handles add that finishing touch. A collection of western accents (bull skulls with horns, cowboy hats, ropes, etc.) are found throughout the interior. Colorful life-size murals decorate the walls. A full-size horse statue stands outside the saloon bar. And for the kids, they've included a play area cleverly named the "City Jail".



(construction photos on back)

RESTAURANTS

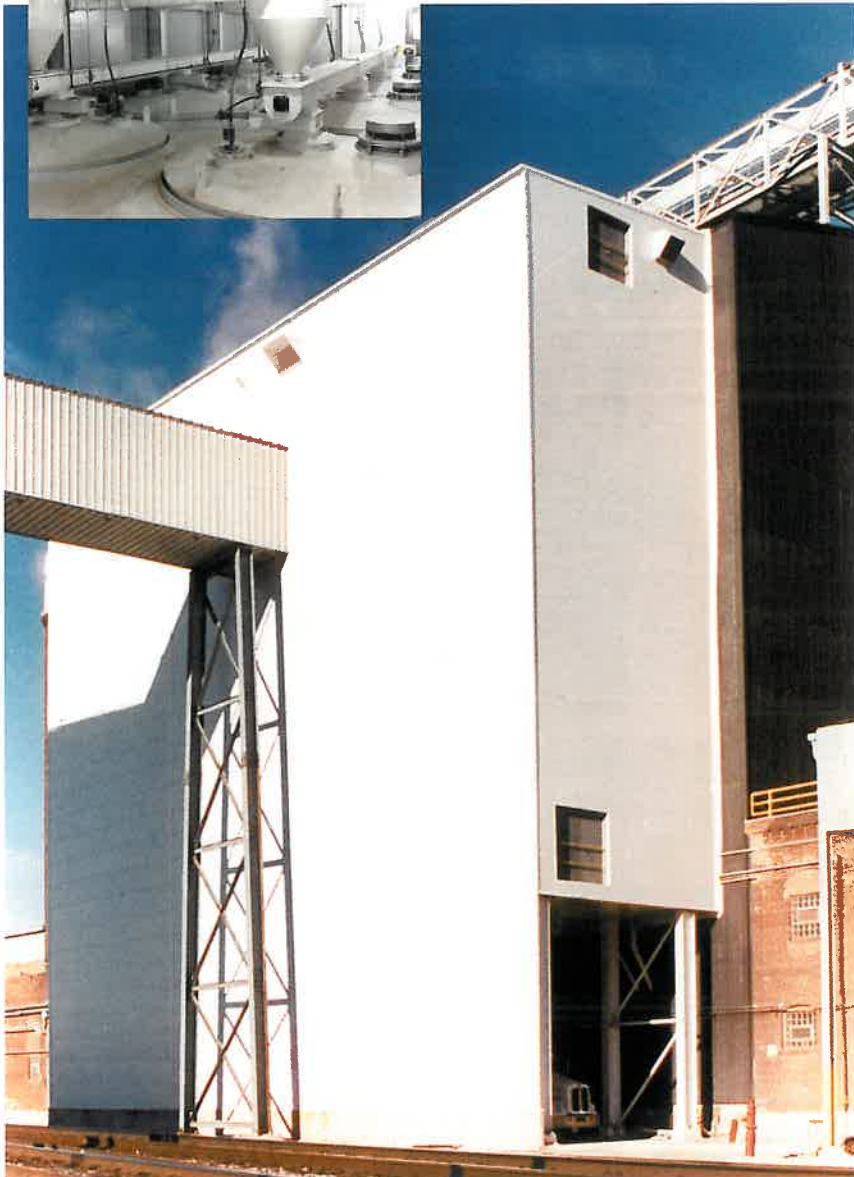
A conventional monolithic slab was used for the foundation. The addition of steel beams to the design made it possible for longer spans to be achieved. It took six men just ten days to install the shell of the structure. Arches, column covers and architectural designs were cut directly from the Snap-N-Lock™ Insulated Panels. Wire lath was attached directly to the panel over a felt paper backing. Stucco was then applied. The illusion of brick was created on the front of the building by patterning it out of stucco. 7/8 inch 26 gauge steel high-bat channel was used to fur-out the inside of the wall panels creating a race-way for romex wiring.



INDUSTRIAL FACILITIES



Fabric dryers generated too much noise within the plant, so a building was constructed to house the dryers. Flexible piping was run from inside the plant through holes cut in the roof of the structure. The openings didn't affect the integrity of the roof panels. Heat running through the piping generated by the dryers was also a concern. Snap-N-Lock™ Insulated Panels can handle temperatures up to 180°.



◀ *To achieve the height necessary for this flour mill, 32 ft. steel panels were installed horizontally. Interior tubing and electrical chases were attached directly to the roof panels.*

A temperature sensitive building was needed to store recyclable waste materials. The Snap-N-Lock™ Insulated Panels were used in combination with roll down doors. ▼



BUILDING ADDITIONS

In both restaurants (right and below), additional seating space was needed. The Snap-N-Lock™ Insulated Panels were chosen, because installation was quick and the enclosure would be well insulated and comfortable for patrons.

Glass windows were chosen to let in natural lighting and no additional materials were applied to the ceiling. The metal skins of the panel have a smooth stucco embossed finish that is both beautiful and easy to maintain. ▼

A combination of insulated sliding glass doors and 4" wall panels give the restaurant an open feeling. The roof was also constructed of 4" aluminum faced panels.



Adding onto a warehouse is easy, whether you need a truck dock, or additional office or storage space. The metal skins of the Snap-N-Lock™ Insulated Panels blend nicely with the existing building. No additional finishes need to be applied.



Aluminum skins were chosen for the Snap-N-Lock™ Insulated roof panels, because they could easily be lifted by hand. Steel wall panels were selected for their strength. Tar paper and a wire lath were attached to the metal skins and three coats of stucco were applied. The roof was then accented with a corrugated steel panel.



RESTAURANTS

This restaurant offers a little something for everyone. It takes you back to the 50's where food was served in the privacy of your car, and offers the convenience of a fast-paced drive-thru for those of us who want a 90's approach. Of course, if you want to sit and relax outside, there is a walk-up window.



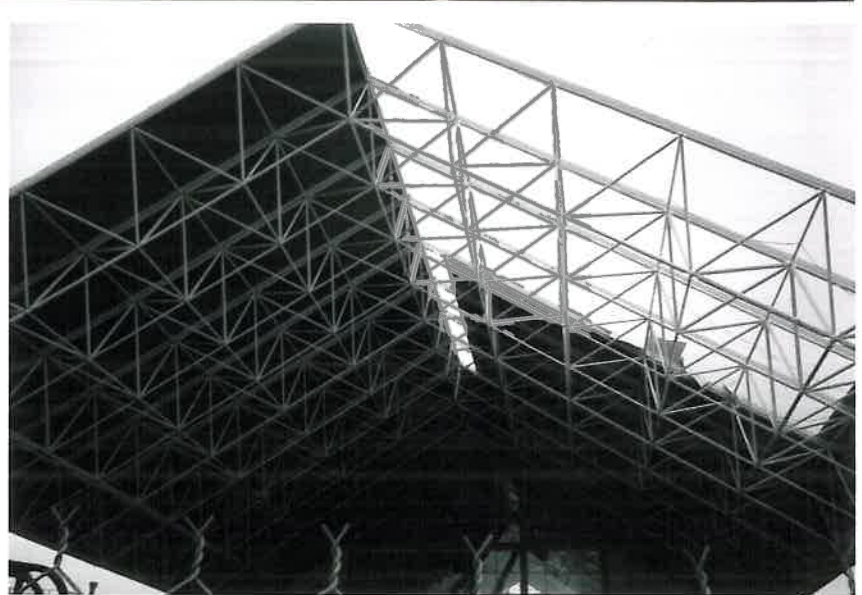
▲ The Big Dog Diner was designed as a portable building. Under current tax laws, it allows the owner to declare the building as equipment, writing it off in just 7 years, rather than 20 years for a building. Aluminum Snap-N-Lock™ Insulated Panels were chosen because they are light, making transportation easy. Stainless steel has been pop riveted to the exterior, giving the restaurant a fun and flashy appearance. Some sections of the metal skins have been painted.

Additional finishes need not be applied to the exterior of the Snap-N-Lock™ Insulated Panel, as in Duffy's Diner. The metal skins have a baked-on enamel finish and are available in a variety of textures. ▶



ENTRANCE CANOPIES

The airspace design of the entrance canopy enabled the designer to run very large spans. The geometric shape and bright colors of both the canopy and pillars give the building a sense of fun and excitement. Since teal was the desired color for the underside of the canopy, aluminum skins were chosen, because they could be custom ordered in that color. White steel skins were chosen for the top. Twenty-four feet long Snap-N-Lock™ Insulated Panels were run horizontally and fastened to the space frame.



Customers won't be as easily deterred by the weather with the addition of an entrance canopy. Canopies can also be easily enclosed with glass or vinyl windows at the time of construction or at a later date. What would otherwise be a plain structure is dramatically enhanced.





The walls and roof of this 8,000 sq. ft. casino were constructed of 6" Snap-N-Lock™ Insulated Panels. Steel skins were chosen for the wall to add strength. Because aluminum panels are light and easy to maneuver by hand with no extra lifting equipment, they were chosen for the roof. A combination of stucco and man-made rock was attached to the panel over tar paper. Colorful accents were cut from the panels and painted.



The pier presented the perfect spot to rent out jet skis, but an office was desired under the existing canopy. The Snap-N-Lock™ Insulated Panels provided the perfect solution. No additional finishing materials were needed on the interior or exterior cutting investment costs. The office also had the added advantage of being portable, just in case the waves took his business to a different shore.



The smooth, flat surface of the panel gives the exterior of this full service car wash a modern look. On the inside, chaseways installed within the panel housed electrical wiring and supported piping and heavy fixtures. 4" panels were used for the walls and 6" panels for the roof.



considerably fewer cavities that permit convection or air circulation than in conventional framing methods. (See study on insulation performance.)

This system is also structurally superior to conventional stud framing methods. The core of rigid expanded polystyrene foam provides shear strength, while the exterior skins provide tensile and compressive strength. The solid walls and roof use all their capacity to support vertical loads, have exceptional racking resistance and can resist local loads, buckling and bending. These are important characteristics for resisting earthquake and hurricane forces.

The panels are very light and easy to handle, which helps the job advance rapidly. The internal locking system eliminates the need for additional fastening methods at the joint. With just a snap, the structural system, wall and roof sheathing and insulation are installed. Construction time is reduced considerably over conventional methods.

All panels are manufactured to exact lengths, which further simplifies construction. Openings for skylights, windows and doors can be pre-cut. Custom shapes for windows or building decor can easily be cut right on the jobsite. Electrical wiring chases can be included in the panel or the panels can be stripped out for surface mounted runs.

The panel offers a wide range of design flexibility, and has been used in a variety of applications including in-plant offices, freestanding units, houses, restaurants, industrial storage units, cold rooms, carport facilities and loading zone canopies. For more information on the Snap-N-Lock™ Insulated Panel or the rest of our structural panel line call your local dealer today.



The attractive roof angles of this outdoor covered lunch area were constructed of Snap-N-Lock Insulated Panels.



Emu Incubation Chambers require that a constant internal temperature be maintained. The continuous insulation and high thermal rating of the 8" Snap-N-Lock Insulated Panel made it the perfect choice for this application (both the interior and exterior view shown).



▲ Employees can enjoy the fresh air while dining under this freestanding patio cover. The Snap-N-Lock Insulated Panels keep the area cool and comfortable.

► The Snap-N-Lock Panels can accommodate a wide range of designs in both pay stations and ticket booths.



Some panel designs require metal in the seam of the panel. Condensation problems will arise, because metal is touching metal. The Snap-N-Lock Insulated Panel has a continuous foam interface which eliminates this problem. The design of the joint hides the sealant from ultraviolet destruction and creates a leakproof seal. This makes it the ideal choice for both vending booth and bus stop covers.

SPECIFICATIONS

Laminated Snap-N-Lock™ Insulated Panels shall be manufactured as by Structall Building Systems, Inc.:

DESCRIPTION:

Snap-N-Lock Insulated Panels are pressure laminated composites of baked, polyester-coated steel or aluminum coil sheets that have been roll formed to produce a patented locking system, and computer cut and routed expanded polystyrene foam. These elements are vacuum sealed and laminated under pressure utilizing the latest technology, with a waterproof adhesive that has the highest ICBO approved rating. The panel has both structural and insulative properties.

Panels shall be 2" to 8" in overall thickness with an E.P.S. foam core density of 1 lb./cubic foot, supplied by the manufacturer or an approved distributor in widths of 23-1/8" (*aluminum*) and 48" (*aluminum or steel*) and lengths up to 40'. Roof pitches as little as 1/4" per 2' can be achieved.

PHYSICAL PROPERTIES OF E.P.S. INSULATION*:

Specification Reference: ASTM C578-87a		Type 1	
Property	Units	ASTM Test	
Density, minimum	(pcf)	D303 or D1622	0.90
Density Range		0.90-1.14	
Thermal Conductivity	at 25F (BTU/(hr.) (sq. ft.)(F/in.))	C177 or C518	0.23
K Factor	at 40F (sq. ft.)(F/in.)		0.24
	at 75F		0.26
Thermal Resistance	at 25 F at 1 inch thickness		4.35
	at 40 F		4.17
R-value**	at 75 F		3.85
Strength Properties			
Compressive 10% Deformation			
	psi	D1621	10-14
Flexural	psi	C203	25-30
Tensile	psi	D1623	16-20
Shear	psi	D723	18-22
Shear Modulus	psi	-	280-320
Modulus of Elasticity	psi	-	180-220
Moisture Resistance			
WVT	perm. in.	E96	2.0-5.0
Absorption (vol.)	%	C272	< 4.0
Capillarity	-	-	none
Coefficient of Thermal Expansion			
	in./(in.)(F)	D696	0.000035
Maximum Service Temperature			
	°F	-	
Long-term exposure			167
Intermittent exposure			180
Oxygen index	%	D2863	24.0

* Information in chart above obtained through The Society of the Plastics Industry, Inc. and is offered in good faith and believed to be accurate.

**R-value means the resistance to heat flow. The higher the R-Value, the greater the resistance to heat flow.

MATERIALS:

Panels shall be custom laminated from:
 .019 Aluminum Coil 3105-H-194 Stucco Embossed
 .024 Aluminum Coil 3105-H-194 Stucco Embossed
 .024 Aluminum Coil 3105-H-194 Cedar Woodgrain Embossed
 .032 Aluminum Coil 3105-H-194 Stucco Embossed
 .032 Aluminum Coil 3105-H-14 Smooth
 .26 gauge Galvanized Steel Coated Stucco Embossed ASTM-A527
 .26 gauge Galvanized Steel Coated Smooth ASTM-A527

Samples will be submitted upon request.

FINISHES:

Panels can be customized with a variety of substrates. Additional finishing materials, like shingles and stucco, can also be applied directly to the skins in the field and are merely for aesthetic reasons.

PANEL TESTING:

Dimensional inspections are performed in the shop to ensure that length, width, squareness and thickness are within specified tolerances. Further shop testing is done to make sure that the finish, alignment and lamination meets applicable standards. The panels are also put through extensive and rigid testing to ensure they continue to meet or exceed building code requirements for wind, live and dead loads. The SNAP-N-LOCK panel is capable of supporting 57 lbs. live load per sq. ft. combined with various wind loadings up to 120 m.p.h.

Fire testing of the Snap-N-Lock Insulated Panel - Aluminum Clad was performed in accordance with the UL Standard "Fire Test of Interior Finish Material, UL 1715" (UBC 17-5) using the ASTM E84-91a Standard Test Method for Surface Burning Characteristics of Building Materials (ANSI 2.5, NFPA 255). Tests resulted in a flame spread index of 5, and a smoke developed index of 170. Additional fire tests administered to the panel include ASTM-1929, ASTM-119 and ASTM-E84-95. In all these tests the panel exceeded industry standards. Results are available upon request. It is also important to note that the solid core construction of the structural insulated panel eliminates the "chimney effect" that causes fires to spread quickly through stick built walls.

Acoustical testing on the panel's expanded polystyrene foam core has been done in accordance with ASTM E90-61T. The transmission of sound for eps was an STC of 51. A brick wall has an STC of 34 and block an STC of 38 according to ASTM E90-61T data. The higher the STC rating, the better the capability of the construction material to block sound transmissions. Structall Building Systems recommends that the interior walls be constructed of steel studs with a drywall exterior finish. This method of construction has a STC of 36, similar to brick.

WARRANTY:

STRUCTALL BUILDING SYSTEMS, INC. warrants to the Purchaser that Structall's Metal Panel products will not delaminate as a result of a defect in materials or workmanship for a period of 10 years from the date of purchase. In the event of a valid claim, Structall will provide replacement panels.

EXCLUSION OF CERTAIN WARRANTIES:

This warranty does not cover damage by willful abuse, normal weathering, negligence or failure to provide normal maintenance and cleaning, exposure to industrial pollution, salt spray or chemical atmosphere, damage by physical abuse, abrasion, impact or other force, or an act of nature, such as fire, lightning, windstorms, hailstorms or causes beyond Structall Building Systems, Inc.'s control.

This warranty does not cover use of the product in applications beyond the design limits as spelled out in the Structall engineering publications. Installation not in strict compliance with the Structall installation instructions shall also void the warranty.

Both steel and aluminum clad panels are subject to corrosion and are specifically not covered beyond any warranty provided by the coil manufacturer. Structall recommends a light pressure wash every year for the underside of any panel roof or panel wall section exposed to, or near by, a salt water environment or a swimming pool or spa where chlorine is used.

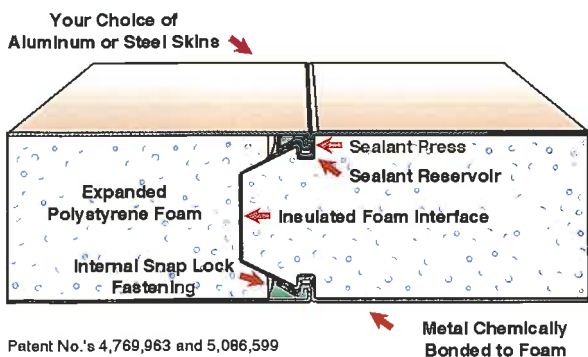
This warranty does not cover infestation by insects, rodents or other pests. As with any type of construction, an appropriate pest control program should be instituted and maintained.

LIMITATION OF REMEDIES:

The Purchaser's sole and exclusive remedy for a valid claim against this warranty shall be for the replacement, without charge to the purchaser, of the Structall panels pursuant to the terms of the warranty. The obligation of Structall Building Systems, Inc. to replace the defective products shall not include the removal, dismantling, or reinstallation of any such products. Furthermore, the Purchaser agrees that no other remedy other than that prescribed above shall be available to the Purchaser or other aligned parties making a claim.

Specifications for the rest of our structural insulated panel line can be obtained by calling Structall Building Systems, Inc.

Structall Building Systems, a leading manufacturer of structural insulated panels since 1987, began with a vision: "to design a panel that was structurally superior to metal and wood framing methods currently available in the market and significantly easier to install". The patented **Snap-N-Lock™ Insulated Panel** was developed after much research. The panel core incorporates expanded polystyrene, because of its high insulation performance. The joint design of the exterior metal skins adds strength and simply snaps together.



The wall and roof panels form a continuous foam interface for maximum energy efficiency. Gaps are virtually eliminated. There is less settling or compressing, less moisture absorption or dust saturation, and

TESTS PROVE SIPS TOPS IN THERMAL PERFORMANCE

Compared to a building envelope constructed of conventional wood frame 2" x 6", the use of structural insulated panels or SIPs can result in a shell that has a 58% better thermal performance overall, according to recent tests performed by the University of Tennessee and the U.S. Department of Energy's Oak Ridge National Laboratory.

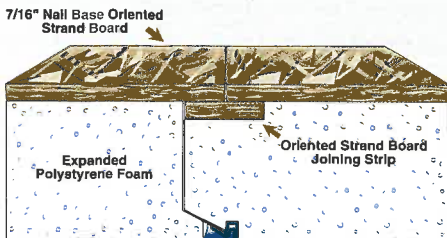
The study tested and compared 18 wall systems — calculating standard R-values — but also calculating how well heat flows through various wall materials (structure and insulation) and how well the walls connect to other walls, flooring, roof, doors and windows — called "whole-wall R-values." Traditionally a wall's R-value is calculated by determining the insulation performance of only structural and insulation materials — called clear-wall R-value. The new study weighed the performance of the entire building envelope or shell, comparing whole-wall R-value performance for concrete, wood, metal, Larson truss walls and SIPs.

SIPs had a whole-wall R-value of 21.6, which is 88% of its clear-wall R-value of 24.7, which means the material creates one of the tightest building envelopes in construction.

Wall System	Clear-Wall R-Value	Whole-Wall R-Value	% Difference
<i>(Each system includes 1/2" plywood exterior and 1/2" gypsum board interior.)</i>			
2 x 4 wood stud wall in 16" o.c., R-1 batt insulation	10.6	9.6	91%
2 x 6 wood stud wall 24" o.c., R-19 batt insulation	16.4	13.7	84%
Structural insulated panel (SIP), 6" thick foam core + 2-1/2" oriented strand boards	24.7	21.6	88%
4" - metal stud wall 24" o.c., R-11 batt insulation, 1" EPS Sheathing + 1/2" wood siding	14.8	10.9	74%
3-1/2" metal stud wall 16" o.c., R-11 batt insulation, 1/2" wood siding	7.4	6.1	83%

The table compares the R-Value or insulation value of several wall systems, tested by Christian and Kosny (the higher the R-Value, the better the insulation performance). The new R-Value calculation by Christian and Kosny — the whole wall R-Value — takes into account how well a wall is connected to the other portions of a home or building, including other walls, the floor, ceiling and window frames.

HALF-SNAP™ INSULATED PANEL



Patent No. 5,349,796

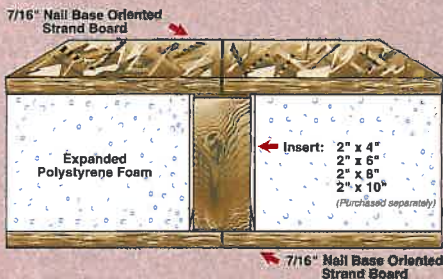
Your Choice of
Aluminum or Steel Skins

- Skins on one side of the panel are rolled to form a unique, patented locking system that snaps together quickly and easily. A standard workable surface of oriented strand board is bonded to the other side.
- Baked enamel finish requires minimal maintenance.
- The continuous insulated foam interface makes the design of the panel extremely energy efficient.
- Installation is quick and easy.
- Available up to 24' in length and 4", 6" and 8" thick.

DOUBLE OSB PANEL LINE

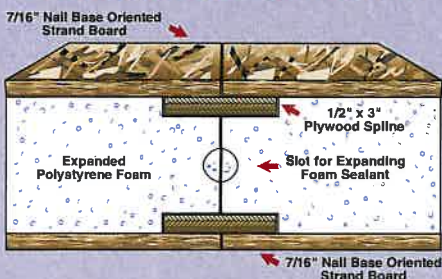
- 7/16" oriented strand board laminated to both sides of an expanded polystyrene core provides remarkable strength and a smooth flat surface.
- Built-in insulation saves valuable construction time and labor costs. Installation is quick and easy.
- Optional insect resistant foam.
- Panels are manufactured in standard sizes up to 24' long and 4-1/2", 6-1/2", 8-1/2" and 10-1/2" thick.

2x Dimensional Lumber Joint



- A 3/4" recess in the foam provided at the joint for inseting a 2" x 4", 2" x 6", 2" x 8" or 2" x 10". Additional lumber shear rails can be laminated inside the panel for additional span and rigidity.
- A 1-1/2" recess in the foam provided top and bottom at the joint for inseting a 1/2" plywood spline. This connection is more economical than dimensional lumber and thermally superior.
- A slot is provided for expanding foam sealant to further enhance energy efficiency.

Dual Plywood Spline Joint



WAREHOUSE ADDITIONS

IN-PLANT OFFICES

STORAGE UNITS

TRUCK DOCKS

WALKCOVERS

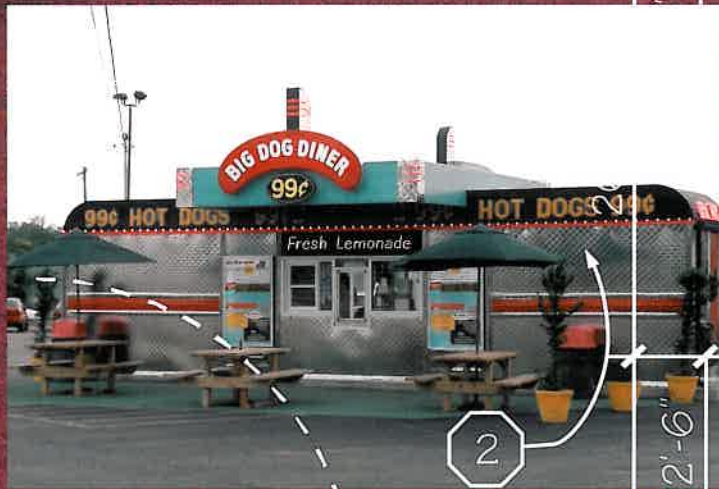
CLEAN ROOMS

BUS STOP COVERS

INDUSTRIAL FACILITIES

SMOKING ROOMS

PORTABLE OFFICE UNITS



14'-0"
14'-0"
12'-6"
14'-0"
12'-6"
26'-6"
12'-6"
14'-0"

Snap-N-Lock
...and more

Structall Building Systems, Inc. Dealer:

