



A Structural Insulated Panel (SIP) is a laminated composite. (Fig. 12)The core of a SIP is polystyrene foam recycled from petrochemical waste and it is pressure-laminated between two facings of Oriented Strand Board (OSB). Farm-grown trees provide the wood fiber for OSB. SIP technology replaces four separate steps in the conventional framing process. Moreover, the SIP has unparalleled thermal efficiency and structural strength .

Fig. 12



Fig. 13

Recent advancements in SIP cutting technology ensure that the precise specifications of the ARCX geometry will be met by SIP manufacturers worldwide. (Fig. 13) Production uniformity and the single ARCX component mean that the SIP-built ARCX has a “built-in” ease of assembly. Smaller ARCX structures can be assembled without heavy lifting equipment by unskilled labor using graphics-only instructions. ARCX components for several small structures can be delivered in a single standard 8' X 8' X 40' shipping container. Thus, disaster victims anywhere can, in three days, build a weatherproof relief structure which will naturally evolve into permanent housing. Low cost third world housing is an obvious implication of the ARCX design efficiencies. ARCX design flexibility also serves the custom high-end market.



SIP technology and ARCX geometry blend efficiently to create a state-of-the-art building system. The single, right-angle ARCX basic triangle can be cut from standard SIP 8' X 24' panels with virtually no waste . The basic ARCX triangle can be oriented in two different ways on the standard SIP panel, providing two basic ARCX dome sizes with nearly unlimited potential for scalability. (Figs. 17,18)

Fig. 14

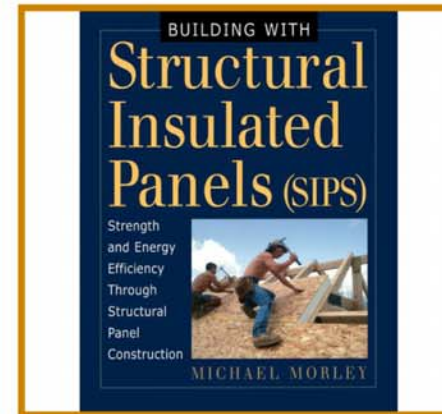


Fig. 15

Michael Morley, lead inventor of the ARCX system, wrote the “bible” on SIP construction and has long-standing relationships throughout the SIP industry. (Fig. 15) These manufacturing partners have the ARCX cutting codes ready to produce ARCX on demand. Engineering Technical Services has modeled ARCX with STAAD software capable of dealing with spherical loads and will provide a PE's seal on our designs. The UC San Diego Seismic Testing Lab is interested in testing ARCX on their full scale shaker table. ARCX is ready for rigorous testing to quantify the following performance projections.

Performance Characteristics of base ARCX structure:	
Transverse loading across triangles	60 PSF
Axial loading through structure	4,000+ PLF
Racking Shear across triangles	600 PLF
Thermal resistance	R-33
Infiltration Rate	.015 ACH
Wind resistance*	200 mph
Seismic resistance*	7.0+
*estimated	

Fig. 16

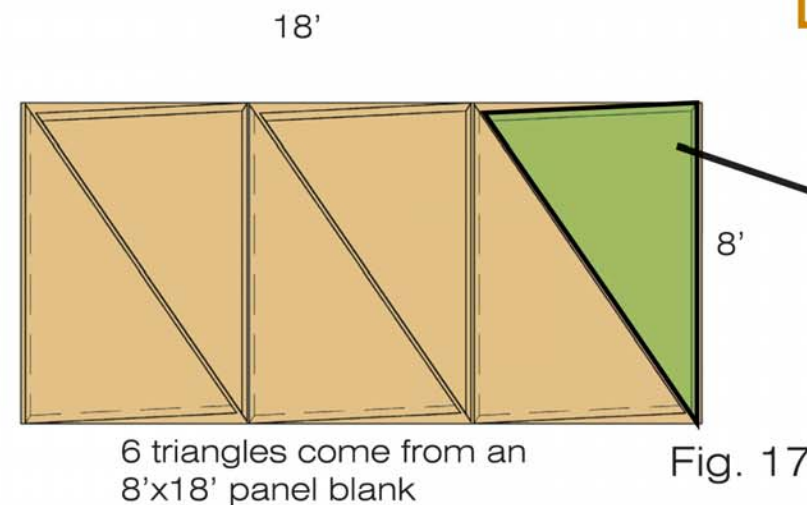


Fig. 17

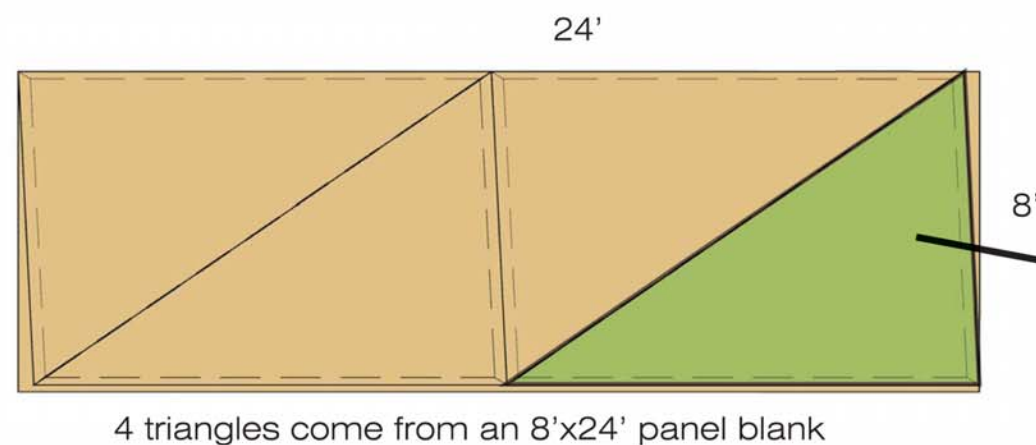
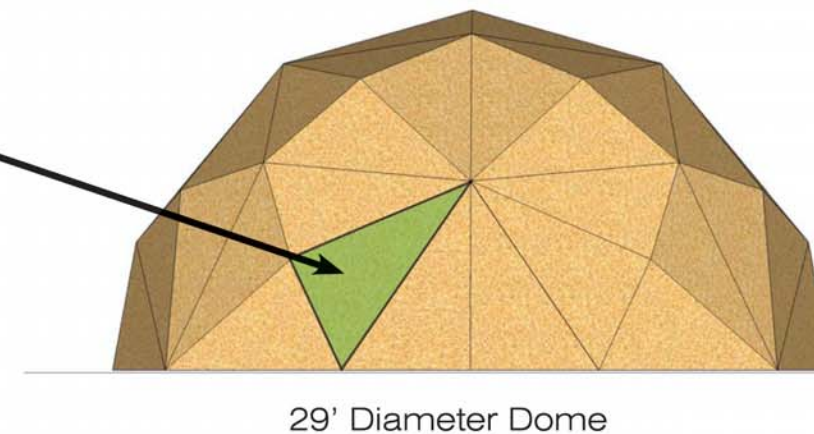


Fig. 18

