



# BULLETIN

SIPLAST ROOF INSULATION SYSTEMS

## Siplast Lightweight Insulating Concrete Roof Insulation Systems

### Sustainable Building Envelope Design – Part I

#### Bulletin 1 – SRIS-0901

Siplast Lightweight Insulating Concrete Systems, which have a successful performance history of over 70 years, have re-emerged as a tool for today's design community in support of building envelope sustainability philosophies. The history of lightweight insulating concrete systems shows a consistent contribution to sustainable objectives by limiting resource requirements and promoting reuse.

A sustainable philosophy was key to the 2007 Duke University Health Systems Heliport Reroof Project. This facility had an existing lightweight insulating concrete roof insulation system with a ballasted roof membrane. Based on calculations by Tim G. Pennigar (Project Manager, Structural Systems, Engineering & Operations Division, Duke University Health), the following sustainable objectives were achieved by reusing the existing lightweight insulating concrete roof insulation system and only replacing the roof membrane.

- Tons of roof demolition debris diverted from the local landfill: 718 tons, equaling 3,184 cubic yards of solid waste.
- Board feet of roof insulation salvaged and certified for reuse: 296,887 (97% salvage rate).
- Current dollar value of salvaged roof insulation: \$133,600 (2007 dollars).
- Actual landfill disposal fees avoided: \$29,797 (2007 dollars).
- Heavy vehicle transportation miles avoided: 2,120 miles / 265 gallons of fuel.

Based on these results, the 2007 Heliport Reroof Project qualified for entry in the 2007 Life-Cycle Building Challenge sponsored by the Environmental Protection Agency, West Coast Green, Building Material Reuse Association, and the American Institute of Architects.

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