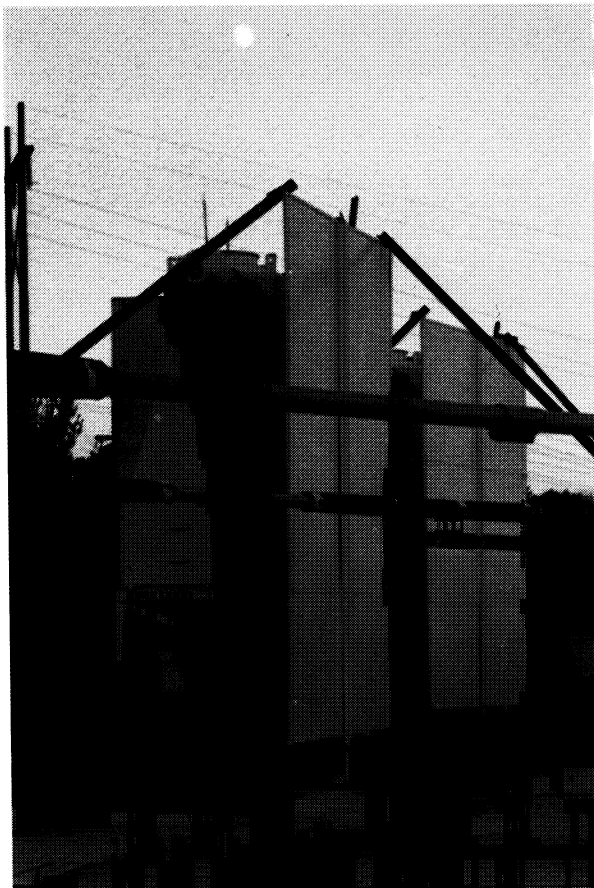




Noise Protection

There is increasing effort in the U.S. to develop ways of controlling noise, particularly in industrial environments, due to federal and state laws, labor union insistence and new findings relative to noise pollution impact on human health. Among various noise protection techniques and systems being employed is a line of highly effective acoustic materials known as SMART Products, whose development stemmed from space research. SMART is an acronym for Sound Modification and Regulated Temperature; the products are manufactured by Environmental Health Systems, Framingham, Massachusetts.



The basis of all SMART products is SMART compound, a liquid plastic mixture with exceptional energy/sound absorbing qualities. The basic compound—later refined for noise protection use—was discovered by Arthur Metzger, a former NASA employee once engaged in work on the guidance system for the Apollo spacecraft. An early version of the guidance system developed severe vibration problems which were traced to the plastic compound encapsulating the system's electronics; the compound did not absorb sufficient energy to dampen vibrations. In a search for a better compound, Metzger found a very elastic type of plastic which literally soaked up energy. Metzger recognized its potential for noise protection and, after he retired from NASA, he founded Environmental Health Systems, of which he is president, to develop and market the compound and associated products—noise-deadening adhesives, sheets and enclosures.

The photos illustrate two examples of SMART applications. Above, the noise-blocking green wall encloses a manufacturing operation at General Electric Company's Providence, Rhode Island plant where 60-ton automatic presses stamp out light sockets at extremely high noise levels. Testimony to the noise-reducing effectiveness of the SMART enclosure is the fact that GE had to install a warning light to indicate that a press has malfunctioned and stopped operating; it is uniformly quiet outside the enclosure, so plant workers could not tell that a press was not operating without the light signal. At left, SMART screens atop a Polaroid Company building in Waltham, Massachusetts block noise from rooftop machinery so that it does not carry to a nearby residential area. In addition to industrial use, examples of SMART applications include sound-proofing for discotheques in Hilton hotels and a hospital "quiet room" for audiological tests. Environmental Health Systems is working on formulations for aircraft cabins, subways, tunnels, farm machinery and a variety of other applications.