



pioneering single envelope

# coldstore technology



the complete composite solution

## isd setting the standard in **single envelope technology**

### cost effective and sustainable

Single envelope cladding is one of the latest in a series of new innovative designs developed for warehouse and distribution facilities. Temperature-controlled facilities built by ISD Special Projects Division already combine enhanced sustainability and reduced environmental impact and now, with the introduction of single envelope technology, ISD Solutions has critically added the potential for improved economic construction, build-ability and reduced operational costs.

### improved economic construction, build-ability and reduced operational costs from isd solutions

- 1/ by replacing a cold store within a warehouse, (box-in-box), with a more efficient single envelope, the entire building is better insulated and achieves much improved air tightness
- 2/ fewer raw materials are needed for the build compared with the traditional box-in-box concept
- 3/ the composite 'cold store' panel is inherently stronger and can achieve greater spans, therefore reducing the amount of secondary steel required

ISD Solutions are UK pioneers in the design, development and installation of single envelope technology.

As a specialist cold store contractor, ISD introduced this new and enhanced system of constructing frozen, chilled and ambient warehouses in 2006.

The company has continued to refine its single envelope design to a position where it is the preferred solution for many industrial applications and special projects.

*"ISD single envelope buildings save cost, build time, and provide the most energy efficient and environmentally sustainable solution"*

*"The top 5 UK supermarket groups have all either built, or are planning to build, distribution warehousing using single envelope technology"*

The energy saving characteristics and reduced construction costs make the ISD single envelope solution an increasingly attractive commercial and operational solution for leading supermarket chains, distribution providers and logistics companies.



# 10

essential reasons to select  
single envelope technology

**isd specialprojects**

- 1/ reduced building material cost saving up to 20% on overall building cost
- 2/ reduced operating cost with improved thermal efficiency & air tightness
- 3/ quicker build time saving up to 20% programme time
- 4/ fewer sub-contract works packages
- 5/ reduced building height saving construction cost, build time & running cost
- 6/ reduced building footprint, no voids means no wasted floor area
- 7/ easier & lower maintenance cost, only one envelope to maintain
- 8/ reduced fire risk, lower premiums; high risk roof & walls voids omitted
- 9/ safer external positioning of refrigeration equipment
- 10/ future flexibility/change of use

...the innovative sustainable solution

## the isd single envelope solution

The single envelope construction solution offers an integrated single package, which can be combined with other ISD Divisions.

By working with ISD, the client team is tapping into the collective skills and experience of each one of four specialist ISD divisions. This provides a one stop shop that avoids complex and potentially inefficient interfaces between various sub-contracted trades and disciplines.

For example, creating firewalls, temperature controlled environments, hygiene chambers and acoustic rooms, and a combination of all is possible using composite insulation panels.

ISD is the only UK-based specialist sub-contractor, suitably structured, financially strong and with the necessary experience in all disciplines to be able to offer a complete composite solution for the largest projects.

## environmental benefits

The many benefits of single envelope construction include:

- / a significant reduction in carbon foot print and much improved BREEAM rating
- / one envelope omitted and potential for a smaller building size reduces material deliveries
- / highly efficient building envelope saves energy use.
- / potential for re-use of some elements or worst case, 100% cost neutral recycling of wall and roof components

## cost savings

Independent assessment\* has been carried out by Davis Langdon UK. Savings for a single envelope versus a "box in box" construction:

Type of Cold Store	Saving
50/50 Chilled/Ambient	5% or £900,000
100% Chilled	14% or £2,600,000

\*Their detailed analysis based on a 250,000 ft<sup>2</sup> warehouse building with a total building cost of £18m

Single envelope technology from ISD Solutions bears all the hallmarks of an innovative sustainable solution that is proving increasingly attractive with major supermarkets, distribution operators, developers, and main contractors alike.

## technical detail

Conformance with latest Part L Building Regulations call for improved insulation values and air-tightness. ISD single envelope buildings are constructed with 'cold store' composite panel which, compared with traditional cladding, has far better insulation values that provide an almost totally air tight construction.

## u values and air tightness

Single envelope walls and roofs typically have a 'U' Value of 0.16 W/m<sup>2</sup> K. Building regulations stipulate 0.25 and 0.35 W/m<sup>2</sup> K for traditional cladding walls and roof respectively.

	Target	ISD Rating
Chilled warehouse	1.0 m <sup>3</sup> .h-1.m-2	0.5 m <sup>3</sup> .h-1.m-2*
Freezer warehouse	0.5m <sup>3</sup>	0.1m <sup>3</sup>

\* @ 50 pascals

