



Quiet-Flow® packaged, on-floor  
air handling units (AHU's)

- Custom engineered
- Low noise
- Space saving
- Energy efficient
- Proven, certified performance
- Rugged construction
- Vane axial, mixed flow and plug fan designs
- Airflow range 3.5 - 18 m<sup>3</sup>/s
- Full design, manufacture and installation service
- BS EN ISO 9001 quality registered

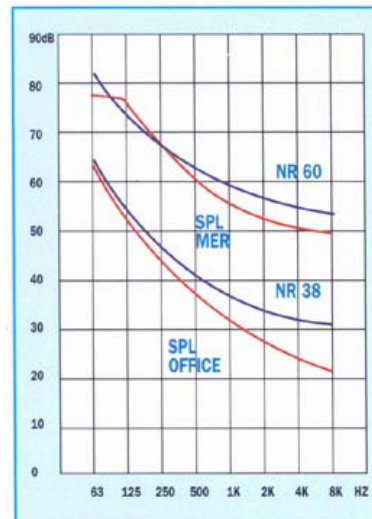


air handling units

## IAC - QUIETER BY DESIGN

IAC on-floor air handling units (AHU's) are up to 15dB quieter than conventional AHU's. They can incorporate axial, mixed flow and plug fans and have highly sound-absorptive Noishield® housings with high-performance Noise-Lock® doors and access floors.

Inside a mechanical equipment room (MER) a 17m<sup>3</sup>/s IAC unit has a noise rating of just NR60. Sound levels in adjoining offices (of dry wall construction) are typically just NR35-NR38, eliminating the need for additional supply/return air silencers.



## PROVEN, CERTIFIED PERFORMANCE

IAC routinely evaluates all new designs of AHU's in its own, full-scale test facilities, frequently in front of independent witnesses. Performance is assessed using an MER and adjacent office area, separated by walls of dryline construction, and project-specific ducting with return air path. The office has a false ceiling.

This configuration allows several important performance parameters to be measured accurately under 'real life' conditions, and with the test



Typical office test in which AHU noise levels are measured.

unit operating at different duties. Test parameters include airflow, pressure drop, absorbed electrical power and noise levels in both the MER and office area.

## SPACE SAVING for more rentable floor space

IAC Quiet-Flow® air handling units occupy up to 50% less floor space than conventional 'straight-through' packaged units of the same capacity. Access to IAC units is usually only needed on two sides - a further potential space saver - and high level acoustic plenum box air outlets can reduce ducting within the plant room by as much as half.



Typical, compact on-floor AHU



Purpose-built IAC test facility for a 12m<sup>3</sup>/s on-floor AHU.

## PRODUCT RANGE

- Quiet-Flow® On-Floor Air Handling Units:  
**Airflow range 3.5 - 18m<sup>3</sup>/s**
- Big-H Quiet-Flow® Plenums

Front Cover Picture: One of over 300 packaged on-floor AHU's for London's Canary Wharf.

PROVEN COMPONENTS ENSURE HIGH  
QUALITY AND RELIABLE PERFORMANCE



Direct drive open running centrifugal fan provides superior air distribution in a confined space.



Laboratory-rated heat exchangers, computer-selected for chilled water, hot water or direct expansion (DX) applications.



Noise-Lock® access doors complete with heavy-duty furniture and extra thick gaskets for minimal leakage. Doors can swing inward or outward and can be opened from both sides.



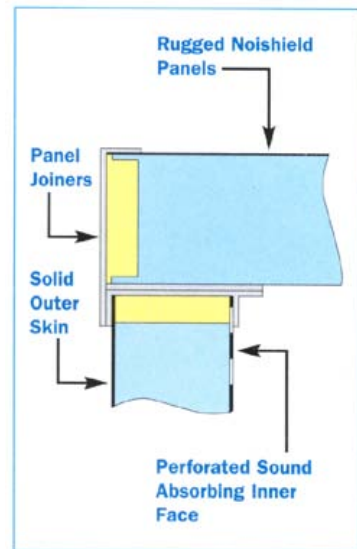
Filter bank configured with a choice of either panel, pleated, bag or cartridge filters.



Laboratory and field proven IAC Quiet-Duct® silencers, selected to suit project noise requirements.



Factory-fitted variable speed drive, marshalling box and electrical cable trunking to customer requirements.



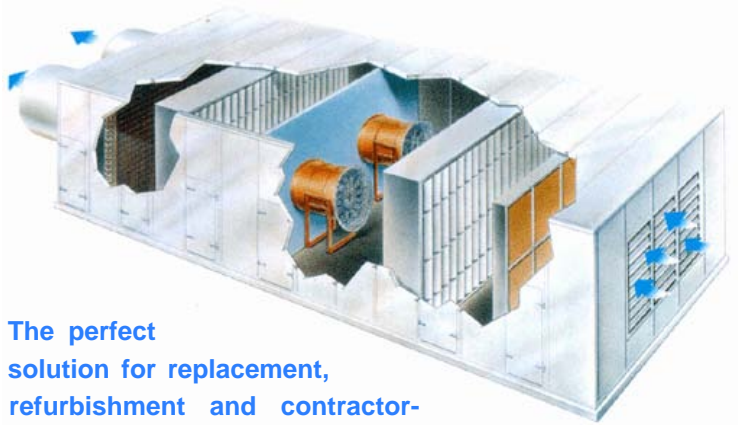
Rugged Noishield® housings - quiet and airtight. Suitable for both factory or field-assembled AHU's. Heat transfer factor: 0.4watts/m<sup>2</sup>/°C.



IAC is a BS EN ISO 9001 quality registered company

## BIG-H QUIET FLOW® PLENUMS

- Strong
- Quiet
- Airtight
- Energy Saving
- Easy to Install



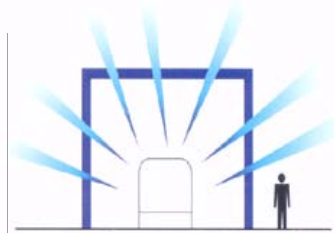
The perfect solution for replacement, refurbishment and contractor-installed on-site AHU applications.

## QUIET-FLOW® IS MORE THAN A NAME.....

The objective of good acoustical design in plenums is to make certain that fan noise within the plenum is attenuated prior to being transmitted to other areas.

Adjacent to the Plenum:  
The attenuation of airborne noise through a structure is rated in decibels according to a parameter known as Sound Transmission Loss or TL. The higher the TL, the more effective a structure is as a noise control barrier. The Noise-Lock® wall and roof panels used in BIG-H plenums have been designed to

provide excellent TL characteristics. They are approximately equivalent to that of a 300mm thick concrete block wall. The TL of Noise-Lock® panels, when assembled with H-joiners and tested in accordance with ASTM E 90, is shown in Table 1. The noise reduction characteristics of a plenum are determined by the TL of the panel, the tightness of the joints and the acoustic treatment of the airflow passages to and from the plenum.



**High Sound Transmission Loss means that people outside the plenum are not exposed to sound levels which interfere with communication or are hazardous or irritating.**

TABLE 1 - TRANSMISSION LOSS IN DECIBELS

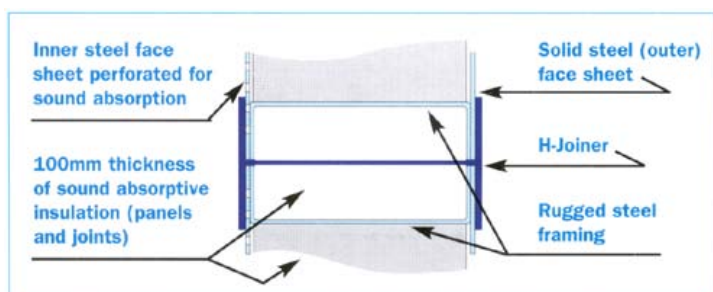
Octave Band Centre Frequencies, Hz									Octave Band Centre Frequencies, Hz							
63	125	250	500	1K	2K	4K	8K	STC	125	250	500	1K	2K	4K	8K	NRC
Noise-Lock I Panel, (102mm Thick)									Noise-Lock I Panel, (102mm Thick)							
25	27	31	41	51	60	65	66	44	0.94	1.19	1.11	1.06	1.03	1.03	1.04	0.95

TABLE 2 - SOUND ABSORPTION CHARACTERISTICS

## READILY ENGINEERED AND INSTALLED

Big-H plenum components are designed with tremendous accuracy and built to exacting manufacturing standards to ensure acoustical, aerodynamic and structural reliability. Dimensions on the jobsite, however, are known with less accuracy. Also, during construction, systems and/or structures within or near a plenum may change. Therefore, a completed plenum may have to be larger or smaller than originally intended. With BIG-H

plenums, on-site dimensional changes are readily accommodated without loss of strength or performance.



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## MANUFACTURE & INSTALLATION

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IAC's flexible UK manufacturing and assembly plant will accommodate small or large production runs. AHU assembly can occur either in dedicated areas at IAC's Winchester factory, adjacent to job sites or, for overseas projects, IAC can incorporate locally manufactured components. IAC's service includes the delivery, offloading, positioning, installing and commissioning of most AHU's.



*Delivery to the project site.*



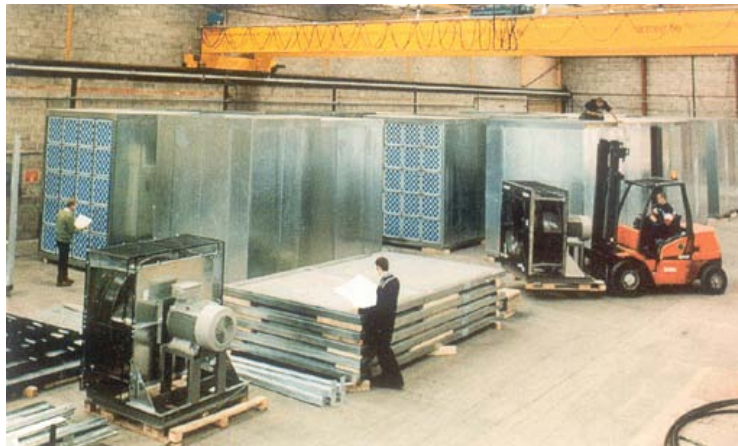
*Lifting, positioning and installation of AHU's is all part of IAC's service.*

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## FEATURES AND BENEFITS OF IAC QUIET-FLOW® AIR HANDLING UNITS

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- Low Noise
- Space Saving
- Energy Efficient
- Fully Tested
- Rugged Construction
- ISO Quality Certified



*Assembly of on-floor AHU's at IAC's Winchester plant.*

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## CLIENTS

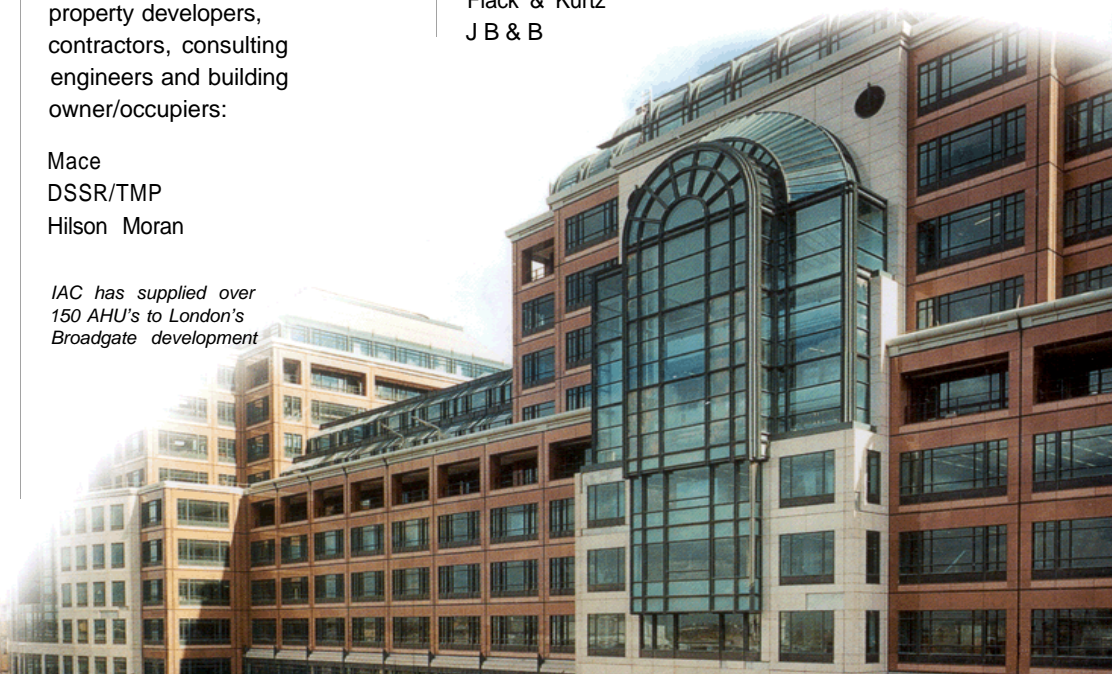
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IAC has provided literally thousands of packaged AHU's for some of the largest and most prestigious building projects in Europe. Its clients include many international property developers, contractors, consulting engineers and building owner/occupiers:

Mace  
DSSR/TMP  
Hilson Moran

Oscar Faber  
Bovis Construction  
H H Angus  
Roger Preston & Partners  
Canary Wharf Contractors  
SOM  
Laing Management  
WSP  
Ove Arup  
Flack & Kurtz  
J B & B

*IAC has supplied over  
150 AHU's to London's  
Broadgate development*



## IAC'S EUROPEAN HEADQUARTERS

IAC's European Headquarters are located at Winchester in Hampshire, UK, approximately 110 kilometres (70 miles) from London. The company's manufacturing operations are housed in a modern, purpose-built factory of almost 8,700m<sup>2</sup> (94,000ft<sup>2</sup>) - the large white building in centre of photo - with offices just a few metres away.

IAC has become Europe's largest industrial and commercial noise control specialist, now employing over 250 people. Operating with the slogan 'Making the World a Quieter Place' expansion has been achieved through diversification; the company now designs and builds everything from aero-engine test facilities to TV and radio studios, hearing testing (audiology) rooms, enclosures for noisy machinery, road barriers, anechoic test rooms, acoustic partitions, doors and windows, air handling units (AHU's), air conditioning and power plant silencers and silencing systems for warships



and luxury ferries. It even supplies rooms to schools for music practice and to the police for interviewing crime suspects.

IAC's clients include such names as British Airways, Ford, the BBC, National Power, Sony, Rolls-Royce, IBM, Glaxo Wellcome, British Gas and Bovis Construction.

The company is a practised exporter, supplying equipment to over 50 countries throughout Europe, Africa, the Middle East and Pacific Rim. It is also registered to the international BS EN ISO 9001 quality standard.



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