

Marsh Farm Futures Destratification fans

Performance specification

JBC/TGK/2139/DESTRAT rev 2

TENDER

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Issue Sheet

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1 Introduction

This performance specification is provided to enable quotations to cover the work required to install destratification fans within the Fun Factory space within Marsh Farm Futures Building.

The work shall be carried out outside of fun Factory opening hours other than on Wednesdays when the Fun Factory is closed (during term time only)

Fun Factory opening hours:

Mon-Friday	10::00 am – 6:00pm
Saturday	10::00 am – 5:00pm
Sunday	10::00 am – 4:00pm

The objective of the works is to achieve energy savings.

Work shall be undertaken as a single phase.

The works comprise:

1. Review of records to confirm electrical wiring source
2. Provision of Risk Assessments and Method Statements
3. Provision of access/safety equipment
4. Installation of new destratification fans and controls
5. Fixed wiring testing of modified circuits

2 Existing Installations

A distribution board is positioned within the store cupboard within the Fun Factory area where power supplies are to be fed to the controller and onward to the destratification fans.

The contractor is to check record drawings and wiring schedules, prior to starting work, in distribution boards to establish the circuitry and to check loads on each circuit remain within capacity of the protective devices.



3 Works Descriptions

The works include the following activities which are to be undertaken and completed as part of the work herein specified.

3.1 Destratification

Destratification fans as scheduled in section 4 and shown on manufacturers drawing UKSD 8746 shall be hung at high level within the Fun Factory secured to the building fabric using Chains rated at 50kgs each. Chains shall be attached to exposed existing structural steel.

Fans shall be mounted at the height recommended by the supplier/manufacturer.

Power shall be extended form the existing distribution board within the store within the Fun Factory area.

The destratification fans shall be provided with an approved method of isolation adjacent to each fan.

The contractor shall produce risk assessments and method statements in order that the impact of the work upon building users can be confirmed.

3.2 Standards of materials and workmanship

The Installation(s) shall comply with the standards of good practice and workmanship generally acknowledged in the relevant industry and only labour qualified by trade test or of accepted grade for the particular works shall be employed.

The intent of the work is to re-use existing conduit systems only.

The whole of the work shall be executed in accordance with the seventeenth edition of the Regulations for the Electrical Equipment of Buildings BS 7671: 2008 and any amendments issued by the Institution of Electrical Engineers. The following regulations shall also apply where relevant, for all materials to be supplied and all work carried out:

- a) British Standards and British Standard Code of Practice issued by the British Standards Institution.
- b) The Electricity Supply Regulations.
- c) CIBSE Code of Practice for Interior and Exterior Lighting
- d) Electricity at Works Act.
- e) Construction Design Management Regulations
- f) The requirements of the Local Fire Prevention Officer and Building Control.
- g) The requirements of the Regional Electricity Company.
- h) Building Regulations.
- i) Health and Safety at Work Act, 1974 (1989).
- j) National Inspection Council for Installation Contractors Standards for Installation.
- k) The Electromagnetic Compatibility Regulations.
- l) All European Commission Directives and Acts of Parliament. DDA, Building Regulations Approved Document Part M and BS8300

RCDs

Residual Current Devices shall be in accordance with BSEN 61008 and IEC 1008 with a sensitively of 30mA unless specified alternatively in the Particular Specification.

In general, the combined RCB/MCB to BSEN 61009 and IEC 1009 are preferred



Contactors

Contactors shall comply with BS5424, Part 1 and have a rating in accordance with 'uninterrupted duty' and 'Utilisation Category AC1' unless otherwise specified in the Particular Performance Specification.

Contactors shall be:

- 1) Totally enclosed in metal cases with hinged and or bolted covers and be complete with earthing terminals externally and internally.
- 2) Modular DIN rail mounting type with ventilation single way inserts between each contactor.
- 3) Modular enclosure to be mounted as part of associated distribution board where applicable.

Contactors shall be of the air break type of uninterrupted rating and sized suitably for inductive circuits.

All contactors shall be fitted with arc shields and magnetic blowouts. Contacts shall be of the self-cleaning type and easily removable and be designed such as to prevent welding in.

All operating coils of contactors shall be designed to operate on AC current and coils circuits shall be protected by a suitable MCB or integral fuse.

Means of isolation shall be provided to isolate all primary supplies and secondary circuits to contactors.

Relays shall be interchangeable and of the plug-in type with equal numbers of normally open and normally closed contacts of rating adequate for their operating duties.

Cables

All cables shall be low smoke zero halogen.

For any final sub-circuit and controls circuitry, no cable having a cross sectional area of less than 1.5mm² shall be used.

In the absence of any specific cable rating in the Schedules, the current rating of any cable shall not be less than that of the fuse or circuit breaker protecting the cable. In determining the compliance with above requirement the contractor will take into account all factors that would have a de-rating factor on the cable.

Polyvinylchloride Insulated (PVC Insulated):-

Insulated cables shall normally be drawn into conduit or trunking. Particular care shall be taken to ensure that the operating conditions are such that they are not installed in positions of ambient temperature greater than those laid down in the current edition of the IET Regulations. No single stranded conductors shall be used.

Cables shall be coloured in accordance with the current IET Regulations.

Flexible cables

Flexible cables and cords shall be rated in accordance with the current IEE Regulations and shall be of the types to suit the temperature conditions and for portable appliances shall be circular formation waterproofed sheathed overall.

All apparatus having flexible cables entering via entries shall be fitted with Strain Relief Grips of appropriate sizes to prevent undue strain being put upon conductors.

3.3 Installation of wiring

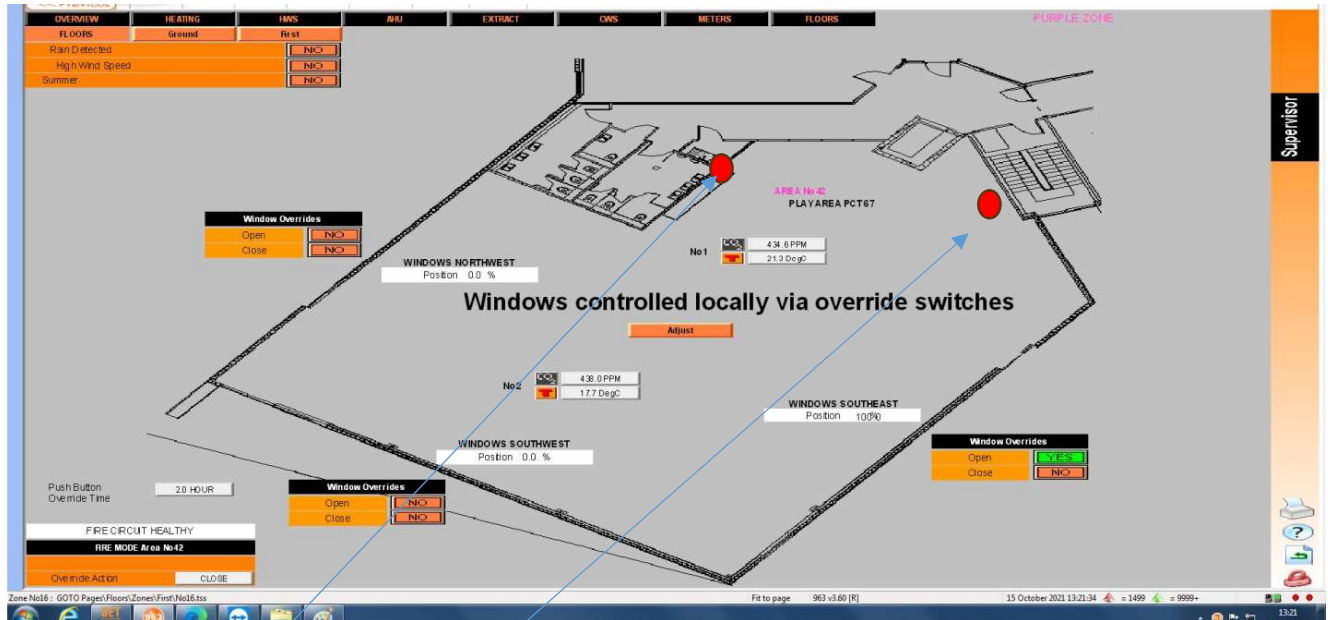
The work includes the installation of power supply from the ground level distribution board within the Fun Factory area AND the installation of smart speed control including high level and low-level temperature sensors.



Wiring shall be carried out strictly in accordance with IEE Regulations and include suitable containment secured to the building fabric where existing containment cannot be used.

3.4 Controls

The controller shall be positioned adjacent to the reception desk within the Fun Factory area as indicated on the modified controls print out below.



Controller position

Distribution board position

The fans shall operate under manual control. The fans shall operate during the heating season as recommended by the manufacturer.

The Speed Controller and lower temperature sensor to be positioned 1.5m from finished floor level

Distribution board is positioned 1.75m from finished floor level



3.5 Removal of redundant materials

All materials made redundant by the works shall be removed from site at the cost of the contractor appointed to undertake the work including all licenses necessary for disposal of any waste.

3.6 Commissioning

The contractor shall bring the destratification fans into operation at the end of the installation.

The contractor shall arrange for the client's engineer to attend to have the fan operation demonstrated to them and to witness the fixed wiring test results.



4 Schedule of suppliers and manufacturers

The contractor shall include for the procurement of equipment as in the schedule of manufacturers below to ensure that a required level of quality is provided.

The contractor is encouraged to submit details of any cost savings that could be achieved via using suppliers of a similar quality with their tender submission.

Should the contractor divert from the supplier listed the contractors shall ensure that the performance of the alternative equipment matches or exceeds that specified. The contractor shall allow for any associated design work arising from the change of equipment.

Preferred Manufacturer Names	Element	Contact Details
Airus Europe Ltd	Destratification Fans 3 x Onyx PS4	Holwell Farm Cranborne Dorset BH21 5QP 01202 554200
Airus Europe Ltd	Speed controller	Holwell Farm Cranborne Dorset BH21 5QP 01202 554200

5 Schedule of Information

Drawings

Drawing No	Title	Scale
Airus Layout Guide		
UKSD 8746	Fun Factory fan positions	NTS



6 Tender breakdown

The tenderer is to complete the breakdown table as laid out below.

Item	Work description	Cost
1	Preliminaries including RAMS	
2	Circuit testing prior to work	
3	Access Equipment	
4	Destratification fan installations	
5	Removal of all redundant materials	
6	Demonstrations to client's engineers	
	Sub-Total	
a	Contingency sum	500.00
	Total	

VAT to be excluded from above sums

