

# Redman Design

## Appendix 4

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### **Interactives Specification**

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American Air Museum  
Imperial War Museum  
Duxford  
Main Fit-out Tender

Date of issue: **July 2015**

## General Interactive Performance Specification and General Notes

These notes should be read in conjunction with any other descriptions and drawings provided and Section B.09 of the general specifications and pricing schedule document.

The following general specifications apply to all the exhibits, in addition to those detailed for any individual exhibits.

Where the fit out contractor intends appointing an interactive specialist as a sub contractor to the main fit out package they should clearly identify their nominated company within their tender submission and provide appropriate examples of recent work to illustrate the company's previous experience and knowledge within this field.

### 1.0 Interactives.

- 1.1 Contractor to allow for all of the specialist works detailed in the drawings and identified in the Schedule of interactives. The work is to include [design development](#), manufacture and installation of all the interactives and spare components listed on the enclosed schedule and drawings. It is the fit-out contractor's responsibility to ensure that all elements relating to each interactive are allowed for either within their own works or that of their subcontractor – including but not limited to all graphics, supporting plinths/shelves, electrics etc.
- 1.2 N.B. All Interactives must conform to the guidelines set out in these documents. This information should be issued to all subcontractors creating interactives. If the design proposal appears to contravene any of the specifications in these guidelines this must be brought to the attention of Redman Design.
- 1.3 All materials used for Interactives must conform to BS 476 part 7 class 1 spread of flame.
- 1.4 All textiles must be fire retardant.
- 1.5 Contractor to allow for samples of any scenic finishes and mechanisms incorporated in the interactives to be provided for approval by Redman Design.
- 1.6 The works are to be carried out by a specialist subcontractor from one of the lists of approved specialists noted in section B.09 of the general specifications and pricing schedule document.

### 1.7 Installation

The contractors should allow for all of the work, materials and expenses required to deliver and install all of the interactives included in the schedule, and all wiring and cables to connect where applicable.

The interactives contractors should be familiar with the site before installation and provide a programme for installation.

After commissioning the contractor is to provide clear operating instructions for use by the museum staff.

### 1.8 Warranties

2 year warranty on all interactives to be included in the price and quotations for extended warranties to be provided upon request.

**1.9 Site Visits**

Allow for at least 2 site visits prior to installation.

**1.10 Maintenance and Management**

Contractor must provide a maintenance manual and details of all equipment, replacement lamps and other consumables.

Contractor to allow for an appropriate level of training for museum staff in the day-to-day management and maintenance of all equipment.

1.11 The Fit-out Contractor to clearly indicate profit on this element of the works.

1.12 The specialist subcontractor is to allow for all the electronics associated with the interactives. Contractor is to include all cabling and lighting controls, lamps and user controls as appropriate. Please allow for dimming and sequencing of any lighting effects. Please allow for contractor design of any display that require and allow interfacing/coordinating with other subcontractors to ensure that all of the elements are included.

1.13 Please provide the overall cost of the works within section B.09 of the general specifications and pricing schedule document, please also note the % value of main contractors mark up on this work. Tenderer must also provide a priced breakdown on the attached interactive schedule showing how the interactive contractor proposes to distribute the budget. This is to be taken as indicative for informational purposes at this stage.

**1.14 Guidelines****1. Introduction**

1.1 The Museums collections are its unique selling point and the audience's interaction with the real thing is an essential part of the visitor experience. Any new displays while employing the most relevant and modern interpretive techniques will always start from the object.

1.2 Budgets are limited so we need to be clear why we are spending on technology

1.3 We will employ a judicious use of ICT only where it provides added value to the visitor

1.4 It will only be used where it is the most relevant and appropriate method of interpretation available. It must be concept led not technology driven

1.5 Appropriate uses are

- To contextualise artefact rich displays providing depth and layering.
- Where strengths of collections are 2D/graphic
- To bring artefacts to life, showing them in manufacture or use
- To bring peoples experiences into the gallery to aid interpretation as drama or reminiscence
- To provide access to parts of the collection held on other sites
- To aid conservation by reducing demand for handling fragile items
- For revealing parts of objects not otherwise visible.

**2.1 Definitions**

Interactive; Any item or function of display requiring an action on the part of the visitor to obtain a reaction from the object that doesn't involve a computer. Any item where a visitor is encouraged to touch, feel or engage with in order to obtain a sensory response.

## 2.2 Details

The words “**must**” and “**should**” when printed in bold text have precise meanings in the context of this document;

**Must:** This word indicates an absolute technical or performance requirement that must be met

**Should:** This word indicates that there may be valid reasons not to treat this point of guidance as an absolute requirement, but the full implications should be understood and the case carefully weighed before it is disregarded. “**Should**” has been used in conjunction with technical standards that are likely to become widely implemented during the lifetime of the project but are currently still gaining widespread use.

## General Requirements for all Interactive Exhibits

### 3.1 Miscellaneous

- Instructions **must** be clearly associated with the interactive – no more than 0.5 metres away
- Where possible, local contractors **should** be used to minimise cost and travel time when problem solving
- Glare from internal lights and the sun **must** be minimised. Reflection angles **should** be considered for a range of heights, including small children and wheelchair users
- Any loose components **must** be designed to not tempt deliberate theft or be of low cost and easily replenished
- Functioning of any exhibit **must** not be heavily dependent on loose components that are likely to go missing without easily being replenished at low cost
- The use of different head types of screws and Allen keys **must** be kept to a minimum across the site
- If polycarbonate is to be used, steps **must** be taken to avoid water absorption
- The exhibits **should** be simple and easy to maintain for the museum staff
- Exhibits requiring electricity **must** have the capacity to be easily switched off, but be secure enough to prevent visitors from doing so
- Realistic engagement times **should** be considered for each exhibit. Exploration is more likely to achieve this than explanation.

### 3.2 Sound

- Any sound effect used **must** not produce an excessively harsh, noisy general ambience
- All sound-effects and electronic sounds **must** be agreed with designer and client
- Local sounds **should** not impinge on the general sound environment unless they contribute to it positively
- Museum staff **must** have volume control of all interactives, multimedia and audiovisuals. The controls **must** be out of sight and inaccessible to visitors

### 3.3 Lighting

- Any lighting effects required **must** be UV filtered, be of minimum functional intensity and not effect any museum object by more than 96000 lux-hours per year (approx. 260 lux-hours per day).
- Lighting **must** have the capacity to be switched off
- Generation of heat from lighting **must** be kept to a minimum

- Any items requiring power **must** come to site pre wired and tested for simple installation

### 3.4 Durable surface-finishes

- All surface finishes **must** be appropriate to the wear and tear to which they are likely to be subjected by children in a hands-on environment.
- There **should** be no serious deterioration of surface finishes for at least one-year of public use.
- Where appropriate, painted surfaces **should** have fully raised edges to minimise visible wear.
- Parts **must** not be susceptible to 'picking' by children's fingers. E.g. plastic trim, rubber grommets etc.

### 3.5 Maintenance

- A full operation and maintenance manual **must** be provided. This should include full descriptions and sources of any spare parts likely to be necessary and recommended schedule and instructions for routine maintenance.
- Training of staff on how to operate and repair exhibits **should** be included as part of the installation agreement
- The successful tenderer **must** make staff available to *immediately* assist with teething problems/malfunctions during the first month of opening.
- The successful tenderer **must** be able to enter a maintenance contract with the museum, requiring them to repair any reported problems and malfunctions that museum staff are unable to repair themselves
- A number of spares of all component parts **should** be included as part of the installation agreement. This should include a minimum provision of one full replacement of any individual component/interactive (definition to be agreed as part of the contract)

### 3.6 Safety

Generally safe for prolonged, hands-on use by adults and children, paying attention to the following risks, for example:

- Exhibits **must** be electrically safe
- There **must** be no sharp edges or corners
- Corners **should** be placed above toddler head height or be cushioned
- The possibility of children climbing on structures and barriers **should** be taken into account
- The exhibits **must** not be foreseeably likely to encourage dangerously inappropriate use by children
- Surface finishes, such as laminates, **must** not be used where they are likely to be damaged in such a way that sharp edges result
- Interactives **should** be constructed with the same checks as children's play equipment. Clearances **must** be considered to avoid trapped fingers, hands, elbows, heads etc. Loose pieces **must** be too large to be swallowed and pass recommended choke tests, but not heavy enough to cause strain or damage when dropped

### 3.7 Mechanisms

- Exhibits **should** generally be suitable for prolonged, hands-on use by adults and children
- Exhibits **should** have a minimum number of moving parts. All hands-on components **must** be stronger than they appear to the user and not weaker
- The correct method of use **should** be apparent to the user from the design

- All push-buttons, levers, crank-handles etc. **must** combine minimum size with maximum strength: if they are too large they will encourage users to apply more force than necessary, increasing wear and tear
- Exhibits **should** be as simple as possible

### 3.8 Accessibility

- All exhibits **must** conform to DDA guidelines
- Exhibits **must** be at an appropriate height for young children and wheelchair users to use
- The comments made by user groups during the consultation phase **should** be taken into account
- Any parts that require movement **should** be moved with minimum effort
- Buttons and touch screens **should** be designed under the assumption that they will be used by individuals with no fingers
- Any exhibits requiring spoken audio **must** also have subtitles

### 3.9 List of specialist interactive manufacturers

You may want to subcontract a specialist interactive producer.

The following list of manufacturers is an example of the kind of companies who have the knowledge and experience of working on museum projects of this kind.

Where the fit out contractor intends appointing an interactive specialist they should clearly identify their nominated company within their tender submission and provide appropriate examples of recent work to illustrate the company's previous experience and knowledge within this field.

### Mechanical and electrical Interactives

#### **EDM Ltd**

Brunel House  
1 Thorp Road  
Newton Heath  
Manchester  
M40 5BJ  
Tel: 0161 203 3150  
Fax: 0161 203 3150  
[rwallis@edm.ltd.uk](mailto:rwallis@edm.ltd.uk)

#### **PARAGON CREATIVE UK**

Unit 8,  
The Airfield,  
Elvington,  
York,  
YO41 4EA,  
Tel: 01904 608020  
[mark@paragon-creative.co.uk](mailto:mark@paragon-creative.co.uk)

#### **Cod Steaks Ltd**

2 Cole Road  
St. Philips

Bristol  
BS2 0UG  
Tel. 0117 980 3910  
[mail@codsteaks.com](mailto:mail@codsteaks.com)

**Sirius Modelmaking,**  
Unit 4A Manor Works ,  
Off King Street,  
Drighlington,  
Bradford,  
BD11 1LH

**Dartura Art & Design**  
**Jane & Jerry Headford**  
Unit 12 Clarence Mill,  
Woodhead Road,  
Holmbridge, Holmfirth  
West Yorkshire HD9 2NE  
<http://www.dartura.co.uk/>

**InteractUn Limited,**  
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38 Foxes Dale,  
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