
**JERSEY FUTURE HOSPITAL
CO004 – SITE OPTION REPORT**

**APPENDIX 6 Technical Site Appraisal
TN-MEP-001 - TECHNICAL NOTES –
MEP**

QUALITY ASSURANCE

Sign off: Peter Thomas

Position: Senior Engineer

Subject Jersey Future Hospital – Change Order 4 – Site Validation
TN-MEP-001 Technical Note - Energy Centres
Rev P4. Date 09.04.2015. Final Preliminary Issue

Date 9 April 2015 Job No/Ref 237035-00

1 Introduction

This technical note has been prepared to support the preparation of the Site Validation Exercise that forms Change Request Nr. 4 as part of the Jersey Future Hospital Scheme.

The four options being reviewed are:

- Option A - Dual Site Options
- Option B - Overdale Hospital Site, 100% New Build Option
- Option C - Existing General Hospital, 100% New Build Option
- Option D - Waterfront Site, 100% New Build Option

Energy Centre areas have been determined from:

Historical plant space information from similar sized healthcare projects.

- BSRIA Rules of Thumb – Guidelines for Building Services 5th Edition (BG9 / 2011)
- Calculations based on estimated system capacity loads.
- Manufacturer physical plant and equipment sizes.
- Plant and equipment space guidance information.
- Maintenance and access space required as advised by manufacturers.

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2 Commentary

2.1 Option A

Existing General Hospital

Refurbished Energy Centre containing the following equipment:-

- Boilers
- Primary and Secondary Circulating Pumps
- Buffer Vessels
- Pressurisation Units
- Control Panels
- Generator
- Fuel Tank
- HV Incomer

Energy Centre floor areas are indicated in Section 2.3.

Existing General Hospital MEP plant will need remain operational throughout the phased construction work period with a minimal change over period.

Overdale Hospital

1 No. new Energy Centre containing the following equipment:-

- Boilers
- Primary and Secondary Circulating Pumps
- Buffer Vessels
- Pressurisation Units
- Control Panels
- Generators
- Fuel Tank
- HV Incomer

Energy Centre floor areas are indicated in Section 2.3.

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2.2 Option B/C/D

2 No. Energy Centres have been provided for enhanced resilience. The Energy Centres will contain the following equipment:

- Boilers
- Primary and Secondary Circulating Pumps
- Buffer Vessels
- Pressurisation Units
- Control Panels
- Generators
- Fuel Tank
- HV Incomer

Energy Centre floor areas are indicated in Section 2.3.

It should be noted that due to the phased nature of the work at the existing site (Option C), the first energy centre constructed will need to be fully sized to accommodate 100% of the MEP services equipment. Half of the equipment will be relocated into the second energy centre following its construction.

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2.3 Schedule of Areas

2.3.1 Total Energy Centre Spatial Requirements

	Conventional Heating			All Electric		
	Option A		Option B/C/D	Option A		Option B/C/D
	Overdale	Existing Site		Overdale	Existing Site	
HV Incomer (m2)	60	60	60	60	60	60
Generator + Fuel Tank (m2)	140	207	280	230	430	567
Boilers (m2)	150	300	450	150	300	450
Energy Centre Total (m2)	350	567	790	440	790	1077
Additional Energy Centre area required (m2)	127		0	440		287

Notes

1. 790m² energy centre originally requested for oil heated single site option
2. Note that single energy centre will not be considered for Options B, C and D. Areas provided are for information only.

* See Section 3

2.3.2 Spatial Requirements for Two Energy Centres

The client has requested that 2 No. separate energy centres be provided for Options B, C and D, to maximise the resilience of services. As a result, the areas of the energy centres will be:

	Conventional Heating			All Electric		
	Option A		Option B/C/D	Option A		Option B/C/D
	Overdale	Existing Site		Overdale	Existing Site	
HV Incomer (m2)	N/A	N/A	30	N/A	N/A	30
Generator + Fuel Tank (m2)	N/A	N/A	150	N/A	N/A	320
Boilers (m2)	N/A	N/A	250	N/A	N/A	250
Energy Centre 1 Total (m2)	N/A	N/A	430	N/A	N/A	600*
HV Incomer (m2)	N/A	N/A	30	N/A	N/A	30
Generator + Fuel Tank (m2)	N/A	N/A	150	N/A	N/A	320
Boilers (m2)	N/A	N/A	250	N/A	N/A	250
Energy Centre 2 Total (m2)	N/A	N/A	430	N/A	N/A	600*

*See Section 3

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3 Risks/Opportunities

Demolition / refurbishment of existing energy centre on Options A and C will require correct phasing to ensure continuity of services throughout.

Asbestos issues in existing Overdale Hospital plant rooms.

* It should be noted that the Client has requested that the 2 No. energy centres be provided (for Options B, C and D only) to maximise the resiliency of services on site. Due to the phased nature of construction at the **existing general hospital site (Option C only)**, the first Energy Centre built will need to be fully sized to accommodate 100% of MEP service equipment. When the second energy centre is constructed as part of a later phase, half of the equipment from the first energy centre will be re-located. The current phasing proposals for any works at the existing site do not permit this arrangement. In the event that the preferred site includes any work at the exiting general hospital site, an investigation will be undertaken to determine how this request can be incorporated into the design / phasing of any scheme.

Allowance has been made for a single Energy Centre for Option A. Resilience will be built into the MEP systems in the form of N+1 provisions of equipment and diverse routing of services.