

[REDACTED]

6 April 2020

INFORMATION REQUEST REFERENCE 19-071

Dear [REDACTED]

Thank you for your information request, received on 8 November 2019. You asked the London Legacy Development Corporation (Legacy Corporation) to provide the following information under the Freedom of Information Act 2000 (FOIA):

"As noted in the E20 Board meeting minutes for the meeting held 27th June 2017:

"The Board requested that the radical seating review report to be addressed to E20 and its members"

Please can I be provided with a copy of the radical seating review report."

I can confirm that the Legacy Corporation holds information relevant to your request. Please find the information requested attached in the following annexes:

Annex A: London Stadium Relocatable Seating Support System – Report of Feasibility

Annex B: London Stadium Relocatable Seating – Feasibility Study Executive Summary

Please be advised that information within these documents has been redacted under FOIA section 40 and section 43. The relevant exemption is identified within the redaction.

Section 40(2) –personal information

*(2) Any information to which a request for information relates is also exempt information if –
(a) it constitutes personal data which does not fall within subsection (1), and
(b) the first, second or third condition below is satisfied.*

It is the standard practice of the Legacy Corporation to redact personal information for those members of staff under Head of Service level, and for non-Legacy Corporation personnel unless consent to release the information has been received.

The section 40 exemption is absolute and is not subject to the public interest test. In this instance, the relevant condition that applies is section 40(2) whereby the information is defined as personal data within s.3(2) of the Data Protection Act 2018.

Section 43(2) - Commercial interests.

(2) Information is exempt information if its disclosure under this Act would, or would be likely to, prejudice the commercial interests of any person (including the public authority holding it).

Section 43(2) is a qualified exemption and subject to the prejudice test and the public interest test. Under the prejudice test we have to consider if disclosure of this information would, or would be likely to, prejudice our commercial interests or the commercial interests of a third party.

Consideration is also given to the harm disclosing this information would be likely to cause, combined with other information already in the public domain (mosaic effect) or possibly released at a future date (precedent effect). The public interest test considers and balances the public interest in disclosing this information against the public interest in not disclosing this information and uses this assessment to decide whether there is sufficient justification in withholding this information under this exemption.

Information disclosed under the FOIA is considered to be public information, and while there is a presumption towards disclosure, consideration needs to be given as to who will have access to this information beyond the requestor and the purposes for which they could use the information.

Prejudice to commercial interests

The Legacy Corporation has assessed the impact of releasing the information redacted under the exemption s.43 – commercial interests in order to decide whether disclosure would, or would be likely to, prejudice their commercial interests or those of any third party(ies). They have concluded that prejudice to commercial interests would be caused by disclosure so that the exemption is engaged.

The withheld information relates to future tenders and negotiations and future business strategies. Releasing the information currently redacted within this document under the commercial interest exemption would harm the integrity of the future procurement and negotiation processes as well as harm the future strategies of the Legacy Corporation.

Public Interest Test

There is, of course, a public interest in promoting transparency of public authorities' decisions and accountability, however, the disclosure of the information within **Annex A and B** identified as commercially sensitive would prejudice the commercial interests of the Legacy Corporation because it will reveal details which would impact on the current and future procurement exercises and negotiations, and business strategies and this in turn would impact on the Legacy Corporation's ability to get best value for the public purse.

It is the view of the Legacy Corporation that the public interest in withholding the information outweighs the public interest in disclosing it.

If you are unhappy with our response to your request and wish to make a complaint or request an internal review of our decision, you should write to:

Deputy Chief Executive
London Legacy Development Corporation
Level 10, 1 Stratford Place
Montfichet Road

London, E20 1EJ

Email: FOI@londonlegacy.co.uk

Please note: complaints and requests for internal review received more than two months after the initial response will not be handled.

If you are not content with the outcome of the internal review, you may appeal directly to the Information Commissioner at the address given below. You should do this within two months of our final decision. There is no charge for making an appeal.

Further information on the Freedom of Information Act 2000 is available from the Information Commissioner's Office:

Wycliffe House
Water Lane
Wilmslow
SK9 5AF

Telephone 08456 30 60 60 or 01625 54 57 45

Website www.ico.gov.uk

Yours sincerely

FOI / EIR Co-ordinator
London Legacy Development Corporation

London Stadium Relocatable Seating Support System – Report on Feasibility



Index

1.0 Executive Summary & Costing

2.0 Design Brief

3.0 The Global Context: Background study

4.0 Current approach to relocation

5.0 Proposed Relocation Feasibility Study

6.0 Next Design Stage

7.0 Risk Register

Prepared for:
London Borough of Newham
 100 Dockside Road, Silvertown
 London
 E16 2QU

Prepared by:
Pell Frischmann
 5 Manchester Square
 London
 W1U 3PD

Revision History

Report Ref: 13303-PF-ZZ-XX-RP-S-0004

Revision	Date	Purpose	Originator	Approved
A	17th August, 2017	First Issue	s.40	s.40



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This work covers the work undertaken during the Feasibility Study of the project to RIBA Stage 1. A description of the main elements of the structure is given alongside the design criteria and parameters to which the detailed design of the project will be completed.

It should be noted this is a concept design and subject to refinement and amendment during the following stages of design.

Information has been provided to allow the Cost Consultant to develop the preliminary project cost plan. This information is preliminary and subject to refinement and amendment during the following stages of design. A suitable cost contingency should be made to allow for ongoing design development, including unknowns and associated risks to the project.

1.0 Executive summary

Our brief was to deliver blue-sky technical solutions for the relocatable seating support system, (seating), used to transform the London Stadium from football to athletics mode and vice-versa on an annual basis; achieving the desired transformation time and cost. Our brief excluded incremental improvements to the current relocation methods as this is already being addressed by others.

We began by researching similar stadia with relocatable seating to look at their methods, experience and feedback to see what lessons can be learnt from these case studies. It is apparent that there are relatively few stadia, all employing different methods with varied outcomes and all were designed from the outset to be relocatable.

We have studied the existing London stadium, the methods currently used for relocatable seating, the time-lapse videos of previous relocations, witnessed recent transitions and reviewed the constraints and issues with those currently involved in its implementation.

Guided by the above and our own design thoughts we proposed two primary approaches to the seating and multiple methods of lateral and vertical re-alignment. This is in order for others may make informed decisions when devising a new system of relocatable seating, (see pages ? To ?).

We have sought to avoid modifications to the existing stadium and the geometry of the existing relocatable seating. These are outside the scope of this study.

For clarification all references to seating include seating, walkways and ancillary components that make up the relocatable seating.

Two solutions are emerging for the relocatable seating, one is steel framed sliding seating and the other is off-the shelf demountable seating. We would not envisage one solution be appropriate for the entire relocatable seating.

The use of smart wheels, air-skates and rails have been reviewed along with two methods for lifting, lifting platforms and scissor seating. Both lifting options benefit from demolition of the existing concrete lower tier.

Locking the existing seating support or part thereof is an option that is outside the scope of this report.

Throughout we have considered the existing constraints and have sought to offer solutions that adhere to these constraints.

1.0 Executive costing

London Stadium - Relocatable Seating Stage 1 Cost Model							C 5 core five
Order of Magnitude Seating Cost Summary							
Technology	Crantage / Manual	LOWER TIER (18,694 seats) Horizontal Movement			EAST MID TIER (2,084 Seats) Vertical Movement		
		Wheels	Skates	Rails	Scissors	Lifting platforms	
Demountable	s.43					s.43	
Fully Demountable							
Initial CAPEX (£)		×	×	×	×		
25 Year Cost (£)							
Transition Time (days)							
Lifted out in Modules							
Initial CAPEX (£)		×	×	×	×		
25 Year Cost (£)							
Transition Time (days)							
Framed	×	s.43			s.43		
Initial CAPEX (£)							
25 Year Cost (£)							
Transition Time (days)							

Notes

- 1 Based on findings in Core Five Cost Model 1 Rev2. Refer to this document for general Basis, Assumptions and Exclusions
- 2 Assumes full Lower Tier of 18,694nr seats is included (covered in the crantage / manual / horizontal sections).
- 3 East Stand Middle Tier of 2,084nr seats is included in the Vertical Movement section. The initial capital cost for Demountable and Modular options for this tier will be in the order of £1,000,000 - 3,000,000.
- 4 Transition costs for the East Middle Tier are based on rates pro-rata'd from the full lower stands.
- 5 25 Year cost includes initial CAPEX outlay. This is non-discounted, at current prices and excludes any inflation, finance charges or the like.
- 6 25 Year cost includes one annual transition from and to football mode. All other operating costs are excluded, such as maintenance, Utilities, staffing, security, overlay, events, etc .
- 7 The solutions above exclude any new fixed seating, groundworks (other than minimal foundations to the Framed system), demolitions, MEP, fit-out and alterations to the lower tier.
- 8 The Framed solution is not based on any particular movement system. However we believe the wheeled solution should be the most cost effective. Further studies and market feedback is required.
- 9 Vertical movement is for East Stand mid-tier only.
- 10 Transition time is for one movement of the entire lower tier. East Stand Middle tier is assumed to be transitioned concurrently with the lower tier.
- 11 All times and costs remain indicative, and it should be recognised the information available at Stage 1 is inevitably limited. Further design development and market engagement is required before Budgets are set.

2.0 Design brief

2.1 Objectives and key parameters

The London Borough of Newham appointed Pell Frischmann to undertake an investigation to establish the feasibility of alternative viable solutions to the current relocatable seating system that would achieve the original cost and programme brief for transitions between football, athletic, cricket, concert and other potential modes. Together with Core 5, Cost consultants, we have looked at capex and operational cost for the proposed solutions.

Key parameters, to be considered in the feasibility study were;

- Seating technical specification requirements.
- Stadium technical and design standards.
- Stadium currently in operational mode so ability to carry out modifications constrained by committed events.
- Stadium concourse level and general arrangement.
- Extent of roof coverage.
- Respect existing access and egress constraints.
- Limit off-site transition and storage.
- Work within existing physical constraints.
- Publish report by end of May, 2017.
- Provide iterative advice and a Report on Feasibility by Early August, 2017.

The study has to target the key operational requirements;

- Target transition time - s.43 per transition
- Target transition cost - s.43 per transition

LBN stated our study was not meant to be a review into the current system, nonetheless the current system constraints and operational experience should be considered to inform our thinking.

Throughout this study we have liaised with those responsible for the current relocatable seating design and implementation as well as the multiple stakeholders. The list includes, the LBN, E20, LLDC, GLA and MACE. Our May 2017 Feasibility Study was presented in draft in order to invite and solicit commentary before publication.

3.0 The Global Context: Background Study

3.1 The Global Context Summary Table

Effective modification of seating suitable for various events is a common challenge for stadia around the world.

Pell Frischmann conducted a brief analysis of solutions used around the world, including the London Stadium. We assessed their effectiveness in relation to their use and the existing constraints, identifying any relevant experience and the key criteria that were used in the design development and in the operational use.

Technical and financial data on the operational costs and resources needed for the transitions in the different venues are not fully available on public sources, the summary table below attempts only to compare relative KPI's.

Key:

Refers to seating support system, (seating).

Moveable - Whole stand relocated in one

Demountable - Piecemeal assembly and re-assembly

Retractable – Large sections

Hybrid – A combination of demountable and retractable

Typology	% of relocatable seating	Venue	Construction cost	Capacity	Transitions		
					Labour	Plant	Time
Movable	M	A	M	30,000	L	L	Fast
	H	B	L	50,000	M	M	Slow
Demountable	L	C	H	71,000	L	L	Fast
	L	D	M	72,200	L	L	Fast
	L	E	M	70,000	M	M	Medium
Retractable	H	F	M	83,500	L	L	Fast
	M	G	M	81,300	M	L	Fast
	L	H	M	55,000	M	L	Fast
Hybrid	M	London Stadium	M	66,000	H	H	Slow

3.0 The Global Context: Background Study

3.2 Lessons learnt

The need for multi-purpose venues is a technical and financial challenge which has been addressed on many occasions and in different locations, and it has been approached and solved in a range of different ways, even though a number of common issues and design criteria can be identified in all the cases we studied.

The main criteria we have been able to extrapolate from the background study are:

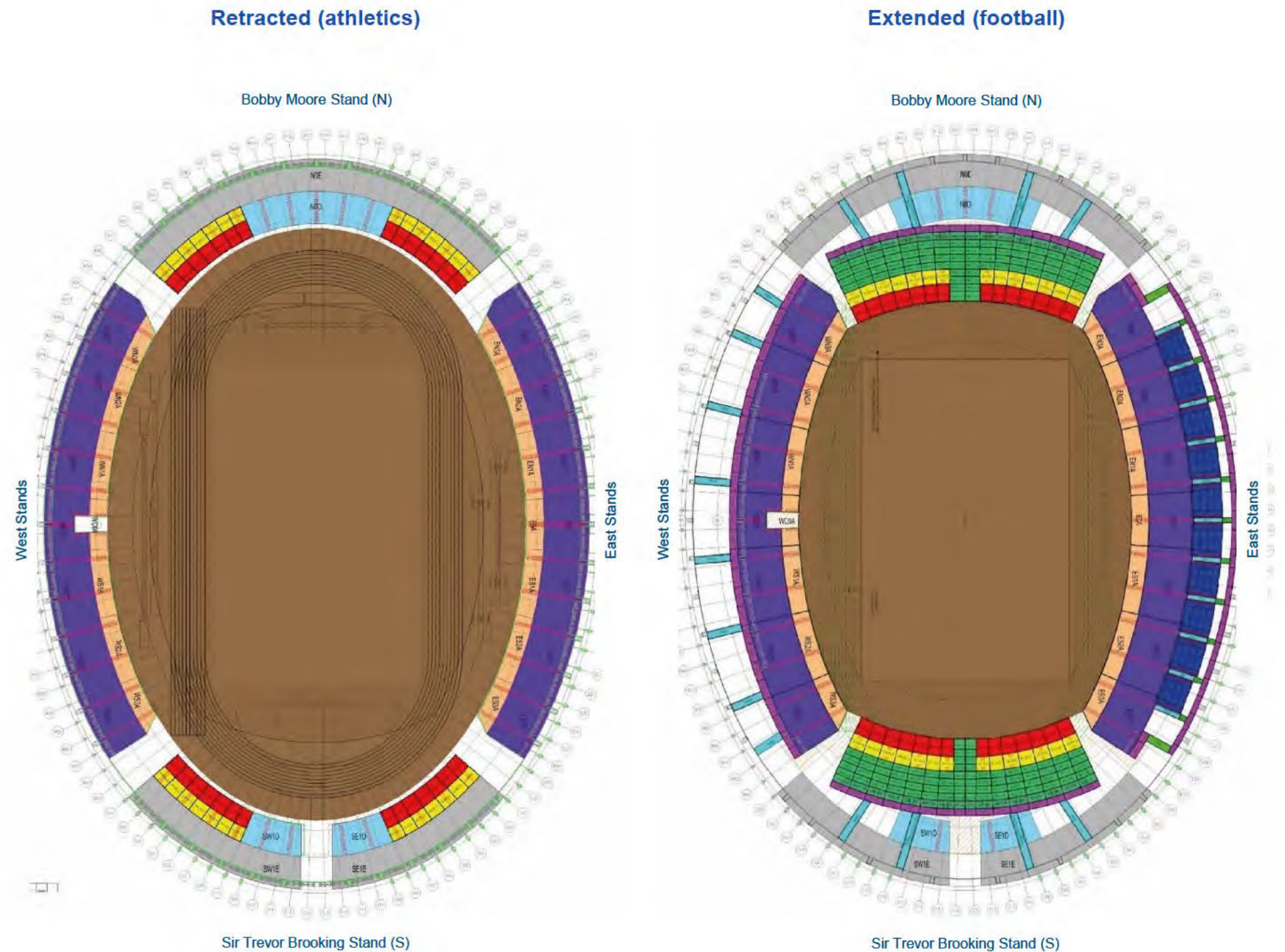
1. The technology that permits relocatable seating on this scale has only been trialled in a relative few number of stadia.
2. The number of transition per year experienced by other stadia is low.
3. The expected life cycle for mechanical components varies greatly. Our peer study found design life ranged from circa 10-20 years which is relatively low.
4. Conversion to fixed configuration at the end of life-cycle of the equipment is a common solution.
5. Venues have been designed at the outset for variable configurations.
6. The most successful relocatable seating transition systems minimize by design the number of components, quantum of labour, temporary equipment\plant and procedures involved in the transitions.

4.0 Current approach to relocation

4.1 Modes

The relocatable seating layout in the retracted athletics mode, and extended football mode is shown in the diagrams opposite. Other layouts including cricket and concert exist. The transition procedure between football and athletics is broadly as follows;

- The lower tier of the “Bobby Moore” North seating is moved closer to the pitch and rearranged to achieve a more suitable radius; an upper tier is added to accommodate additional seats and the statutory disabled platforms, while the required walkways are installed to connect the seating to the circulation space
- A similar procedure is applied to the “Sir Trevor Brooking” South seating.
- In the West the lower tier seating is moved closer to the pitch, maintaining a similar layout, and connecting walkways are added as required.
- In the East lower tier is seating moved as in the West stand, but a mid tier is added for additional seating.



4.0 Current approach to relocation

4.2 Our observations

Pell Frischmann reviewed two time-lapse videos, taken on September 30th 2016 and witnessed the recent post football to concert mode transition in 2017, see photo opposite. Both were useful to understand the complexity of methods, people and temporary plant employed to facilitate the transitions. The procedure, as appears in the videos, when transitioning from athletics to football is as follows:

- North stand: Stands are not moved, but demounted and then reassembled using 4 wheeled cranes. The central portion of the extended stands is assembled on site using elements delivered to site.
- South stand: West-end half of the lower tier is moved as a single segment using 3 fork lifts; then additional seating modules are assembled and added using a heavy duty mobile crane. The East-end half of the lower tier is moved using fork lifts, then it is demounted and reassembled in its final position. The central portion of the stand is assembled on site using elements delivered to site.
- East stand: the track is covered with protective layers, 3 fork lifts are used to sequentially move the stand. 2 heavy duty mobile cranes are used to install the walkways. A third mobile crane installs the additional seat modules.
- West stand: the track is covered with protective layers, 3 fork lifts are used to sequentially move the stand. 2 heavy duty mobile cranes are used to install the walkways.



4.0 Current approach to relocation

4.3 Typology

The retractable seating is built from bespoke lattice framed aluminium alloy components, as is the additional seating. Additional walkways, conversely, use traditional demountable steel scaffolding.

To convert from retracted athletics mode to extended football mode retractable seating slides, in segments, on air skates propelled by heavy duty fork-lift trucks. Additional seats, disabled platforms, walkways and the rest of the accessory elements are demountable, brought to site by road when needed. Their installation requires pitch-side assembly, and lifting into position using mobile cranes.

Demountable systems of this type are least suitable to horizontal relocation. The action of forces and stresses induced in transition is causing damage and will reduce the design life. Safety inspections and repairs are\will be required on an ongoing basis.



4.0 Current approach to relocation

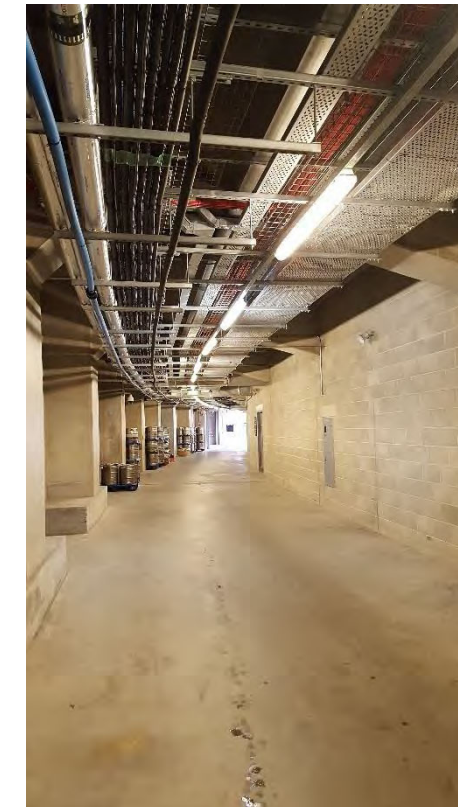
4.4 Existing physical constraints.

There are various physical constraints that should inform any future re-design, namely;

1. Existing MEP plant and services.
2. Contaminated land capped by existing surfaces.
3. Athletics track, not suited to air skates or rails
4. Camber of athletics track, hinders air skates.
5. Lower concrete tier, used to house MEP plant and infrastructure.
6. Access and egress constraints.
7. Access for seeding the pitch.

Stadia regulations are non physical and include;

1. Roof coverage to seating.
2. Existing sight lines.



4.0 Current approach to relocation

4.5 Our observations.

The transition methodology for the London Stadium is affected by a number of issues that severely limits its efficiency, namely;

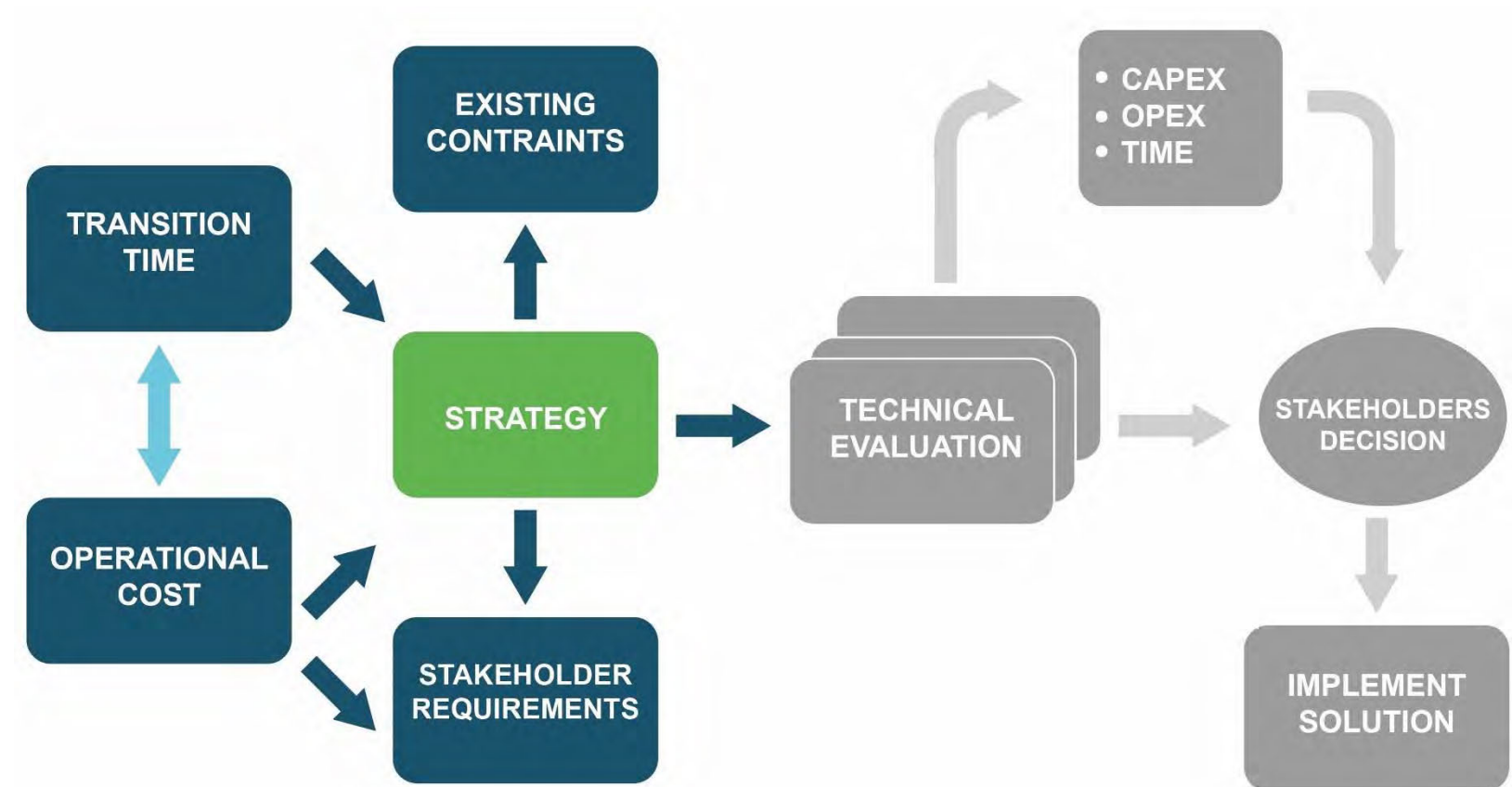
- Large number of different seating typologies, systems and components with a substantial lack of standardisation.
 - Lack of intrinsic stability during transitions.
 - The lack of directional control of the seating in transition.
 - The camber of the athletics track hinders transition.
 - The quantum of the required workforce.
 - Significant preparation work prior to transition.
 - A bespoke methodology for each seating system.
 - Varied, multiple and heavy temporary craneage and plant.
 - Transport to and from the venue of the demountable elements.
 - The bespoke hybrid systems in use and the less than satisfactory methodology for sliding and lifting all contribute to the failure to fulfil the original time and cost targets.
 - Aluminium alloy makes up the bulk of the demountable systems and has three times less strength and stiffness compared to steel. It is three times lighter, hence ideally suited for demountable systems; however its lack of stiffness and strength makes it unsuitable for relocatable seating and prone to damage.
- Off-site storage.
 - Substantial and repeated training process for changeable labour force.
 - Frequent risk damage resulting in inspections and component replacement.
 - Multiple seating configurations, should be rationalised for increased standardisation.
 - No discernible strategic engineering leadership or monitoring. The seating in-use is essentially falsework which demands a high quantum of skilled engineering input for efficiency and safety.
 - Frequency of regulatory inspections, repair and maintenance likely to escalate year on year.

5.0 Proposed Relocation Feasibility Study

5.1 The way forward

The review of the current transition methodology leads us to the following recommendations;

- Minimise the number of seating types in-use
- Minimise the number of components in any system.
- Design the modules to be stable transition.
- Eliminate off-site storage.
- Minimise pre-transition preparation works.
- Review available technology as alternatives to air skates.
- Minimise temporary plant.
- Test, in-situ, all proposals prior to implementation, including full-scale in-situ prototype testing.
- Use standard dismountable component seating not bespoke.
- Reduce management, training, monitoring and overheads by design.



5.0 Proposed Relocation Feasibility Study

S.43

5.0 Proposed relocation feasibility study

S.43

5.0 Proposed relocation feasibility study

S.43

S.43

6.0 The Next Design Stage

6.2 Key thoughts

The next step should be the detailed design of the preferred solutions to an updated client brief for relocatable seating.

Prototype(s) should be tested in-situ, performance measured, lessons-learnt and a cycle of design development and further testing to a final solution. Value engineering and stakeholder approvals to be sought at key pre-agreed milestones. All prior to final tender, procure and implementation.

The process should include operational requirements, frequency of changes, agreed budgets, life to first maintenance, design life, risk and timescales for relocation. This will then provide the key drivers for design evolution.

7.0 Risk register

7.1 Key risks

S.43

Pell Frischmann

excellence through innovation

London Stadium Relocatable Seating

29th June 2017

Feasibility Study Executive
Summary

13303-PF-ZZ-XX-RP-S-0002
Revision A

Submitted by Pell Frischmann

REVISION RECORD Report Ref: 13303-PF-ZZ-XX-RP-S-0002.
13303-PF-ZZ-XX-RP-S-0002A - EXECUTIVE SUMMARY

Rev	Description	Date	Originator	Checked	Approved
A	First Issue	29/06/17	s.40	s.40	s.40

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Prepared for:

London Borough of Newham
Newham Dockside 1000 Dockside Road
London E16 2QU

Prepared by:

Pell Frischmann
5 Manchester Sq.
London W1U 3PD



CONTENTS

- 1. INTRODUCTION..... 1
 - 1.1 SCOPE OF THE REPORT 1
 - 1.2 GLOSSARY OF TERMS 1
- 2. DESIGN BRIEF 3
 - 2.1 OBJECTIVES AND KEY PARAMETERS..... 3
 - 2.2 BACKGROUND STUDIES..... 3
- 3. EXISTING CONSTRAINTS 4
 - 3.1 OPERATIONAL EXPERIENCES 4
 - 3.2 KEY CHALLENGES..... 4
- 4. PROPOSED RELOCATION SYSTEMS 6
 - 4.1 KEY CRITERIA..... 6
 - 4.2 PROPOSED OPTIONS..... 6
 - 4.2.1 Locked Seats..... 6
 - 4.2.2 Modular system 7
 - 4.2.3 Framed modules..... 7
 - 4.2.4 Lifting Platforms 8
 - 4.2.5 Scissor frames..... 8
 - 4.3 MEP IMPLICATIONS..... 8
 - 4.4 COST IMPLICATIONS..... 9
 - 4.5 COMPARISON TABLES..... 10
 - 4.5.1 Applicability..... 10
 - 4.5.2 Site constraints..... 11
 - 4.5.3 Invasiveness..... 12
 - 4.5.4 Pros and Cons..... 13
- 5. THE NEXT DESIGN STAGE..... 14
 - 5.1 RECOMMENDED ACTIONS..... 14
 - 5.2 SUGGESTED PROGRAMME..... 15

1. Introduction

1.1 Scope of the report

The scope of this document is to provide a summary of the outcomes of the investigation to establish the feasibility of an alternative solution to the current relocatable seating system that would enable a quicker and lower cost transition between football and athletic modes. The initial study, presented in the Feasibility Study report issued on May 2017, has been expanded in sufficient detail on structural, civil and MEP engineering, to allow the cost consultant to prepare a preliminary costed budgets for each of the proposed technical options and to account for the existing constraints, including potential demolition of the lower concrete tiers and relocation of plant rooms and key utilities.

Therefore, this document has to be read in conjunction with the following reports and sketches:

- A. 13303-PF-ZZ-XX-RP-S-0001 Rev.C "LS Relocatable Seating, Feasibility Study", by Pell Frischmann
- B. 13303-PF-ZZ-XX-RP-S-0003 Draft – "Technical Options Comparison Table", by Pell Frischmann
- C. PF-KA-13303S0002 Rev.A "Proposed Relocation Option Permutation" by Pell Frischmann
- D. 1609-50-RPT-01 Isse No.05 "London Stadium, MEP Services Diversions Assessment", by Desco
- E. "London Stadium Relocatable Seating, Cost Model", by Corefive

1.2 Glossary of terms

The terminology listed below is recurrent in this document and in the aforementioned associated reports. For the purposes of this document, the following definitions apply:

- s.43 [Redacted]
- s.43 [Redacted]
- s.43 [Redacted]
 - s.43 [Redacted]
 - s.43 [Redacted]
- s.43 [Redacted]

- s.43** [Redacted]
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- **s.43** [Redacted]

2. Design Brief

2.1 Objectives and key parameters

The London Borough of Newham appointed Pell Frischmann to undertake an investigation to establish the feasibility of an alternative solution to the current relocatable seating system that would enable a quicker and lower cost transition between football and athletic modes, to target the following key operational requirements:

- Target transition time - s.43 (per transition)
- Target transition cost - s.43 (per transition)

The Capital Expenditure required to achieve the brief's targets has not been defined or limited, and it will be considered by the interested parties in relation to the whole scheme, with due consideration to the time scale of the possible upgrade and to the efficiency of the upgraded transition procedure.

The Feasibility Study was completed in 8 weeks, from the appointment to the submission of the final report.

After a preliminary and introductory site visit on November 15th 2016, a kick-off meeting between Pell Frischmann and the LBN's representative was held on February 3rd 2017, during which the following key aspects of the brief were indicated:

LBN also clarified that the study was not meant to be a review into the current system, even though the current system constraints and operational experiences should be considered to inform a solution.

Pell Frischmann's engineers visited the site on several occasions (08/02/2017, 17/03/2017 and 23/03/2017) and a project workshop with all the involved parties was held at Pell Frischmann premises on March 16th 2017.

2.2 Background Studies

The need for multi-purpose venues is a technical and financial challenge which has been addressed on many occasions and in different locations, and it has been approached and solved in a range of different ways, even though a number of common issues and design criteria can be identified in all the cases we studied.

The analysis of the different situations, requirements, and adopted solutions around the globe provided a valuable knowledge for the development of the feasibility study Pell Frischmann carried out and which is described in this document.

- s.43
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 - s.43

3. Existing Constraints

3.1 Operational experiences

The relocatable seating currently operated in the London Stadium reflects, at least in principle, the original concept design of the redevelopment, although it is not capable of the desired fully automated features.

The lateral East and West stands are moved in segments using air skates and fork-lifts, while this technique is used only on a portion of the North and South stands. All the additional seats, the disabled platforms, the walkways and the rest of the accessory elements are demountable and stored outside the venue when not needed. Their installation requires transport to site, partial assembly on the pitch side, and lifting into position using mobile cranes.

The retractable portion of the stands is built with aluminium modular components, which are used also to support the additional seats. Walkways, on the contrary, use scaffolding-type elements, producing on site a mix between two different systems. The number of elements used to assemble the demountable portions is relevant, and each element requires to be manually bolted to the adjacent ones. In addition, there is a number of bespoke elements to complete the finishing.

The retractable stands were designed to be moved using low pressure wheels and slide on channels recessed into the ground, using a hydraulic system. The system was tested off site in standard theoretical conditions, but proved itself inefficient when applied on the stadium premises, mainly due to the combination between the lack of directional control of the unit in transition and the uneven surface of the track. It has been replaced with air skates, to lift the single module, and fork-lifts to move it into position.

All these factors added complexity to the transition procedure and the logistics associated, yielding to longer than expected transition periods and to the consequent combination of increased transitions costs, due compensations and loss of revenue.

3.2 Key challenges

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4. Proposed Relocation Systems

4.1 Key Criteria

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4.2 Proposed Options

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4.2.3 s.43 [Redacted]

[Redacted]

s.43 [Redacted]

s.43 [Redacted]

s.43 [Redacted]

4.2.4 s.43 [Redacted]

[Redacted]

s.43 [Redacted]

s.43 [Redacted]

[Redacted]

s.43 [Redacted]

[Redacted]

s.43 [Redacted]

[Redacted]

4.2.5 s.43 [Redacted]

[Redacted]

s.43 [Redacted]

[Redacted]

s.43 [Redacted]

[Redacted]

[Redacted]

4.3 s.43 [Redacted]

[Redacted]

- s.43 [Redacted]
- s.43 [Redacted]
- s.43 [Redacted]

4.4 s.43 [Redacted]

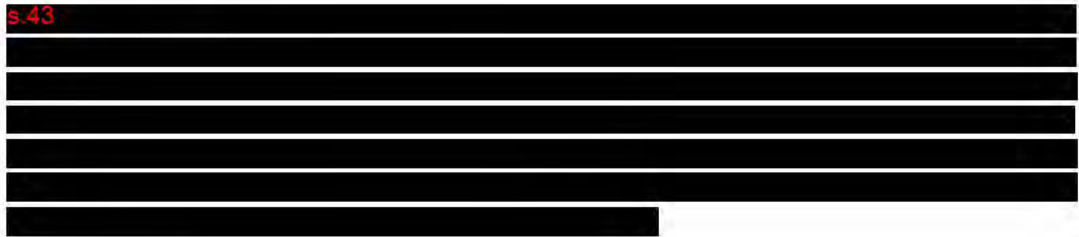
[Redacted]

s.43 [Redacted]

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4.5 Comparison Tables


s.43



4.5.1 Applicability

TECHNOLOGY OPTIONS	
Bobby Moore Stand (North Stand)	
Sir Trevor Brooking Stand (South Stand)	
East Stand (Additional Seating)	
West Stand (Hospitality Area)	

Table 4.5.1 s.43



4.5.2 Site constraints

NR	
1	
2	
3	
4	
5	

Table 4.5.2 **S.43**

4.5.3 Invasiveness

NR	OPTION	NO DEMOLITIONS	LOWER TIER PARTIAL DEMOLITIONS	LOWER TIER EXTENDED DEMOLITIONS	EXCAVATIONS	NOTES
1	S.43					
2						
3						
4						
5						

Table 4.5.3 **S.43**

4.5.4 Pros and Cons

NR	OPTION	PROS	CONS
1	S.43		
2			
3			
4			
5			

5. The next design stage

5.1 Recommended actions

s.43 [Redacted text block]

s.43
s.43 [Redacted text block]

s.43 [Redacted text block]

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s.43 [Redacted text block]

5.2 Suggested Programme

The feasibility study should be followed by a concept design of the different options, to evaluate the best solution for the London Stadium.

The chosen preferred selected solution will be developed into detail and technical design, with regular reviews from all the parties involved, and the aid of field tests to experiment the feasibility of each elements in the context of the specific venue. The outcome of the field tests may require design rethinking or amendments, so finalizing the design in all aspects can take longer than usual and therefore appropriate time resources should be allocated for the design process.

Depending on the solution chosen, phased construction can be coordinated with the football season, minimizing the time during which the venue is not available to host events.

