



Leicester
City Council

***Leicestershire Fire and Rescue
Service Training Facility –
Strategic Business Case***

August 2019

Lead director: Matt Wallace

Executive Summary

This strategic business case outlines the opportunity and challenges to produce a single fit for purpose training unit for the Leicestershire Fire and Rescue Service (LFRS). The unit will provide the training facilities currently delivered at 5 sites across Leicestershire and Rutland realising efficiencies in travel and support as well as delivering the mandated training to an appropriate level. Additional benefits will be monies saved on rent and the release of land for sale or development.

The unit will replace training currently being delivered at the following sites.

- Loughborough Training Centre – facility owned by LFRS.
- Shepshed Fire Station – facility owned by LFRS.
- Southern Fire Station – 999 year lease as of Jan 84.
- Kendrew Barracks, Uppingham – rented by LFRS.
- Caterpillar, Desford – rented by LFRS.

No single site has yet been identified, but the site will ideally house a Fire Behaviour Unit (FBU), a Leadership and Development centre (L&D) and elements of external training. A site agent has been appointed to find a suitable 3 – 4 acre site and his findings and recommendations will follow this report.

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• Introduction

Leicestershire Fire and Rescue Service (LFRS) have appointed the Estates and Building Services (EBS) department of Leicester City Council (LCC) to deliver a bespoke training facility comprising a Fire Behaviour Unit (FBU), a Leadership and Development centre (L&D), along with elements of external training and accommodation for Business Support staff. This appointment has been commissioned under the Memorandum of Agreement (MoA) between LFRS and LCC around partnering working, sharing and supporting on matters appertaining to LFRS land and buildings.

Training is currently delivered at 5 sites across Leicestershire and Rutland as follows.

- Loughborough Training Centre
 - Leicestershire Fire and Rescue own the freehold to this land.
 - 20 staff are permanently based at this site including the Business Support staff.
- Shepshed Fire Station
 - Leicestershire Fire and Rescue own the freehold to this land
 - 4 staff are permanently based at this site.
- Southern Fire Station
 - This is a leasehold with a 999-year term which commenced on 1st January 1984.
 - 3 staff members are based at this site.
- Kendrew Barracks, Rutland
 - Space is rented on this site for a fee of 3k a year.
 - Leicestershire Fire and Rescue are responsible for the maintenance and total safety of the area rented to us.
 - Planning permission is also granted to live fire burns.
- Caterpillar, Desford
 - Space is rented on this site from the land owners.
 - Planning permission is granted up to August 2020, with restrictions.
 - The cost of maintenance and ongoing development in 2018/19 is 20k.

By replacing these sites with a single fit for purpose site, LFRS will realise the following:

- A new FBU to replace the current one at Loughborough that is failing and requires costly annual reactive and planned maintenance¹.
- Land at the 2 sites owned by LFRS can be considered for re-use by LFRS.
- Monies saved on the 2 rental sites.
- Efficiencies in travel time between sites which although difficult to quantify, is nonetheless a legitimate saving.
- All training staff supported on site by the Business Support staff.
- A facility that provides the correct level of H&S, welfare and duty of care support in terms of training, changing and office facilities.
- Savings achieved from not seeking training support at other Service's facilities.
- A DDA compliant, sustainably designed and operated facility that meets all current regulations and provides both reduced operating costs and shows LFRS's commitment to reducing its carbon footprint. Sustainability, particularly considering the nature of the

¹ Estimated remaining life 18 month – LFRS Business Case Report, Annex A to this report.

activities to be held on site, is paramount to the LFRS corporate ethos and will be a significant consideration in the design of any future facility.

• Synopsis of Requirements

Detailed requirements were submitted by the LFRS lead for both the FBU and L&D and are included as Annexes B and C to this report. A synopsis of requirements is as follows.

Fire Behaviour Unit

- Multi storeyed, preferably 4, with a basement.
- Able to replicate commercial and residential.
- Able to replicate kitchen, lounge, dining room, bedrooms and studio flats.
- Vehicular access all around the FBU.
- Balconies to simulate fire development coanda affect.
- Refractory slabs on the floor and tiles on the walls
- Extraction units that provide positive and negative pressure – simulates wind driven fires.
- Large rooms, that can be compartmentalised using steel plates to vary the layout.
- Simulated photovoltaic cells (solar panels) on the roof.
- Windows that can be opened in a variety of ways for ladder pitching.
- Heavy duty doors for method of entry training.
- 1 set of stairs through the middle of the building.
- 2 further internal stairs at either end of the building.
- External enclosed staircase leading to internal staircase.
- Loft hatch.
- Attack demo box.
- Pitched and flat roofs.
- Anchor and winch points.
- Dry riser inlets and outlets.
- Thermal Image cameras.
- Temperature monitors.
- Automatic opening vents.
- Extraction units built into the unit.
- Emergency lighting.
- Separate control room not attached to the FBU.
- Observation room external for safety and assessor.
- BA set store suitable for a storing, servicing and refilling the BAs.
- 2 x hydrant diagonally opposed.

Leadership and Development Centre

- Reception and Business Support team are for 10 people.
- Office space for 4 managers including a meeting area.
- Office for 23 instructional staff, consider hot desking due to number of staff in at any time.
- Incident command control room.
- Computer server space climate controlled room.
- Break out area.
- Kitchen area for candidates and instructional staff.
- Seating area for lunch breaks.
- BA set store suitable for a storing, servicing and refilling the BAs.
- Drying room.

- Clean room.
- Training rooms for varying delegate numbers.
- Dirty classroom.
- ICT classroom.
- Storage for personal equipment as well as training equipment.
- Diesel fuel station.
- Gender neutral washrooms/disabled access toilet facility.
- Male and female locker, shower and toilet facilities.
- Covered but not enclosed incident training area, additionally used for external physical training.
- Internal gym.
- Scrap car compound for 6 cars and a tractor unit.
- Garage space secure area for 4 fire appliances, a response car and a LGV driver training vehicle.
- Car Parking up to 50 spaces.

- Options Overview

General

Many of the support functions for both the FBU and L&D facility can be shared if the facilities are co-located on a single site. Splitting the facilities over 2 sites will result in replication of elements such as storage, kitchens, server rooms and changing facilities and will result in additional costs.

The design of both the FBU and L&D facility will be largely dependent on the site chosen, however at this stage an assumption of a 3 – 4 acre single site has been made.

This report does not account for groundworks, services, restriction on extraction of fumes from the FBU or a number of other considerations that will be site specific.

L&D Training Centre

The L&D building is currently assumed to be a two-storey structure containing predominantly entrance, workshops, storage and changing facilities on the ground floor, with offices and training spaces largely on the first floor. The building is likely to require two staircases and a lift to provide disabled access throughout, is likely to be of a steel framed structure with concrete floor slabs and either load-bearing or clad external walls depending on the location and adjacent environment of a selected site. It is also assumed at this stage that the L&D and FBU will be co-located on the same site; some of the support spaces required for the FBU would therefore be accommodated within the L&D building, particularly the FBU Control Room, and the BA storage/maintenance spaces, to avoid duplication of facilities. The building will be located with associated car parking facilities and external covered and open spaces for storage of vehicles and materials, and spaces for external training activities.

Fire Behaviour Unit Three Options

The FBU building is assumed to be a four storey building incorporating a basement area (or simulated basement space), providing a broad range of building-type training spaces including commercial and residential properties. The structure will also incorporate a range of different building elements (roofs, balconies etc) and reconfigurable internal partitions to enable a range of building types and new layouts to be simulated.

Two construction options are currently being considered: the first is a 'wet' type construction using load-bearing masonry and concrete, and a selection of doors and opening window types to offer a wide range of fire training scenarios. The second option is a simplified structure of similar size, constructed using standard steel type shipping containers, arranged to provide the required building/layout types. It is possible that a hybrid solution could be developed, incorporating elements of both options.

The structure will be fitted with a range of fittings to assist training on specialist elements such as photovoltaic arrays and anchor points for working at height, along with appropriate extract

ventilation, temperature monitors and emergency lighting to enable training activities to be monitored and controlled. The building will be located with a clear hard-standing zone around the outside with space for fire-fighting vehicles, along with separate storage facilities for combustible materials and equipment, and safe viewing facilities for assessors.

Schedule of Accommodation

The following schedule of accommodation has been drawn up by LCC supporting architects using The Architects Pocket Book, HSE guidelines, LFRS guidance and industry best practice. The total area equates to a total m² of c 7,200 m², around 2 acres. In order to future proof the proposed site and to consider additional training requirements currently under review, it is recommended that a larger sit, c 3 acres, is considered.

LFRS Training Facility		Schedule of Accommodation	rev: P2
Room Name	Notes	Area m ²	
		rev P2	
Learning & Development Training Centre			
Entrance Lobby	Main / visitor entrance	6.00	
Reception / Waiting Space	seating for 6 visitors, reception hatch, signing in/out board	16.00	
Business Support Team office	10 desks, hatch to reception, printing/copying	80.00	
Secure Store	filing/stationery storage, accessible from Business Support	8.00	
Managers Office	2 person (Station Managers)	16.00	
Managers Office	2 person (Learning Delivery Manager(s))	16.00	
Managers Office	2 person (Learning & Development Manager(s))	0.00	
Managers Meeting Room	space for 4-6 (instead of meeting space in offices)	15.00	
Instructional Staff Office	20 desks for 23 staff, pedestal storage, file storage, printing/copying	160.00	
Learning & Development Store	racked space for training / test equipment etc	12.00	
Breakout Space 1	private room for phone calls, one-to-one meetings, 3-4 people	9.00	
Breakout Space 2	private room for phone calls, one-to-one meetings, 3-4 people	9.00	
Breakout Space 3	private room for phone calls, one-to-one meetings, 3-4 people	9.00	
Incident Control Room	desk along two walls, 4 screens, 2 PCs	10.00	
Command Support Room	meeting table for observers	10.00	
Server Room	space for 2No. Servers (c. 700w x 1000d x 2200h)	12.00	
Staff Kitchen / Breakout	Hot/cold drinks, fridge, freezer, seating area for 8 staff per sitting	18.00	
Trainees Kitchen / Breakout	Hot/cold drinks, fridge, seating area for 20 trainees per sitting	32.00	
BA Workshop (dirty)	space for 30 sets & cylinders, 12 high desks, ss sink/washing facilities	50.00	
BA Compressor/Clean Workshop	'clean' space for compressor, air lines to BA room	12.00	
Drying Room	space for drying instructors fire kit, external access required?	12.00	
Clean Kit Room	400w x 600d lockers for 44 No. instructors clean BA kit and uniforms	28.00	

Training Room 1	15+ trainees plus 2 instructors, interactive screen, room divider to TR 2	42.00
Training Room 2	15+ trainees plus 2 instructors, interactive screen, room divider to TR 1	42.00
Training Room 3	6-8 trainees/instructors, mobile interactive screen, meeting use also	20.00
Training Room 4	6-8 trainees/instructors, mobile interactive screen, meeting use also	20.00
Training Room 5	6-8 trainees/instructors, mobile interactive screen, meeting use also	20.00
Training Room 6	6-8 trainees/instructors, mobile interactive screen, meeting use also	20.00
Training Room 7 (dirty)	15+ trainees plus 2 instructors, interactive screen, for dirty (kitted) use	24.00
Training Room 8 (ICT)	8 trainees plus 2 instructors, workstations, interactive screen	20.00
Gymnasium	includes equipment storage racks etc	25.00
Locker Room	300w x 300d personal locker for all staff (44 lockers)	18.00
Male WCs	2 WC / 1 UR / 3 WHB per floor	20.00
Female WCs	3 wC / 3 WHB per floor	20.00
Gender Neutral/Accessible WC	2 No. gender neutral/accessible WC - one per floor	8.00
Heat Acclimatisation Room	8 person, seated/standing	12.00
Male WC / Showers / Lockers	3 SHWR / 2 WC / 2 WHB / 15 lockers (for male trainees)	24.00
Female WC / Showers / Lockers	3 SHWR / 2 WC / 2 WHB / 15 lockers (for female trainees)	24.00
Cleaners Store	2 No. - one per floor	6.00
Plant Room	estimated figure	15.00
	Net Area	920.00

Add Circulation	% allowance	184.00
	Net Area	1104.00

Fire Behaviour Unit		
FBU Structure	assumed 4 storey structure with footprint of c. 6m x 20m	480.00
Control Room	independent control room	16.00
Observation Room	independent room for observers/assessors	16.00
Equipment Store	secure storage for training equipment (container)	32.00
Wood Store	secure storage for carbonaceous material (container)	32.00
BA Store	assumed that L&D building facilities will be used	0.00
	Net Area	576.00

Total Net Area	1680.00
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external items		
FBU zone	footprint of FBU structure including min. 5m separation zone on all sides	500.00
Appliance Garage	covered space for 4 appliances plus LGV driver training vehicle	315.00
Vehicle parking	parking spaces for 4 vans and 1 response car	100.00
Staff Car Parking	28 spaces + 2 disabled spaces (including road space)	612.00

Visitor Car spaces	19 spaces + 1 disabled space (including road space)	406.00
Motorcycle bays	1 bay (space for 2-3 motorcycles) (including road space)	20.00
Bicycle Racks	1 bay	5.00
Incident Ground	area for training use	600.00
Scrap Car Compound	2 No. 3-car racks plus space for tractor unit	85.00
Driver Training Space	c. 34m x 12m area for vehicle manoeuvring (use car parking area?)	410.00
RTC Training Space	covered space for RTC training (could use Appliance Garage?)	50.00
Equipment Store	secure storage for training equipment (container)	32.00
Re-fuelling point	tank and pump, diesel fuel only, capacity TBC	TBC
Other	access roads, boundary treatment, verges, pedestrian routes, vehicle circulation, FBU and associated external spaces etc	TBC
Add Circulation	% allowance	2351.25
	Net Area	5486.25

- Site Options

An independent site agent has been commissioned by LFRS to find a suitable 3 – 4 acre site. The site agent will be unable to progress until the scope is agreed by the client, LFRS, and the full extent of the facilities and area required is known

There are risks around the land acquisition. These are related to potential sites being developer tied, to the suitability of sites available including potential planning conditions related to the design of the FBU and to the time required to acquire a suitable site.

- Financial Case

Options Order of Cost Summary

At this early RIBA stage it is not feasible to achieve a high degree of cost certainty.

Savings

There are a number of cost savings to be made:

- Rent at Desford and Kendrew: £13k per annum.
- External training costs estimated at c£4m².
- Estimated savings over 10 year from providing a single training facility c£900,000³.

Construction Costs

	Container Units	Hybrid	Wet Build
Fire Behaviour Unit	c£1.5m	c£1.9m	c£2m
Leadership and Development	c£2.9m	c£2.9m	c£2.9m
External Training Areas	c£2.3m	c£2.3m	c£2.3m
Total	c£6.7m	c£7.1m	c£7.2m

It must be noted that these are construction costs only based on the agreed schedule of accommodation. The following are excluded at this stage.

- Fees
- Risk costs
- Inflation
- Client side costs
- OHP
- Site acquisition
- Site remediation
- Planning

² Figures from report produced by LFRS L&D Manager.

³ This does not account for annual running costs of the new facility or any potential rent.

- Procurement Strategy (Options)

At this stage, it appears that the value of the construction contract, particularly if there is a single contract for the FBU and L&D centre, is likely to exceed the EU threshold. LFRS will therefore need to comply with the Public Contracts Regulations 2015 when procuring the construction contractor for this project. It is likely that the most appropriate procurement process to achieve this compliance would be a Restricted Tender procedure, under which LFRS will issue a PQQ to any interested party and shortlist c. 5-6 contractors to submit detailed costed tenders, from which the most economically advantageous, evaluated together with the quality of the submission is selected and awarded the contract. It would be advised to allow 6-9 months (from completion of the specification documents) to complete this process.

An alternative this would be to use a framework agreement, let by a public buying organisation (e.g. ESPO) or another fire service/local authority. Such a framework agreement would include either one or a panel of suppliers. If the framework agreement includes a panel of suppliers, a further competition would probably need to be conducted to establish which supplier and the terms/cost of the contract. This process would take 3-6 months. The council has approached other fire services to see if it could identify a framework agreement that could be used in this instance and awaits responses.

Initial procurement input to date has been provided by LCC under the retainer in place for strategic support. Further project-specific input, if required, would be subject to a more detailed proposal and charge at the agreed daily rate.

- ## Management and Governance Strategy

Leicestershire Fire and Rescue Service (LFRS) are procuring Leicester City Council (LCC) Estates and Building Services (EBS) to provide multi-disciplinary services to manage and undertake the design and development process, from feasibility inception, to post completion and hand over of a new development. The development is to provide a new Learning and Development Training facility and Fire Behaviour Unit.

LCC have been appointed to work through the Royal Institute of British Architects governance stage RIBA 0 plus. This stage comprises;

Strategic Definition: Supporting LFRS, in developing the Business Case and Strategic Brief and other core project requirements.

LCC will work with LFRS towards **Preparation and Brief** in defining project objectives, sustainability aspirations, defining the project budget and options appraisals.

If mandated to proceed, the design work and the associated consultancy, procurement and legal services will be progressed through the RIBA Stages 0 to 7 and associated governance gateway approvals. The professional services will be procured through the existing council construction services frameworks and EBS will oversee the project delivery to handover and 'In Use'.

LCC Estates and Building Services (EBS) will establish and lead a multi-disciplinary project team, engaging with LFRS and key stakeholders to agree the project brief, scope and budget, facilitating LFRS to make key decisions in terms of business case approval, strategic direction and budget definition for approval.

LCC have worked with LFRS to develop this report for review and to provide the basis for presentation to the Combined Fire Authority Board to be held 27 September 2019. The RIBA 0 report will contain a comprehensive brief for the works to be delivered, the associated order of cost budget, options considered, initial feasibility spatial design block plans, a costed risk schedule and an indicative programme plan.

Programme and project management plans

The project definition and project plans are to be prepared and agreed by LFRS once the project is mandated.

Governance

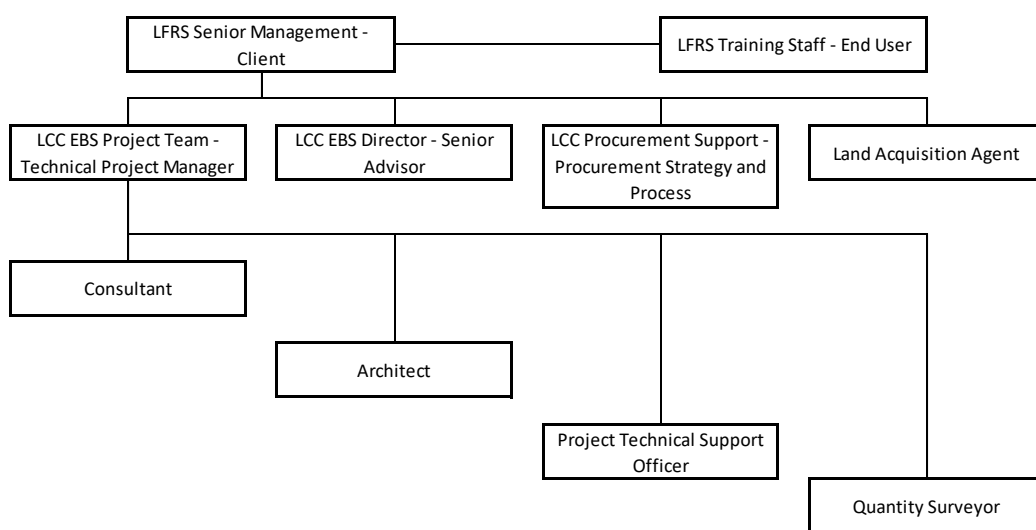
LCC will, in accordance with the terms of the MoA, carry out on behalf of LFRS a level of governance around the project. This will include, but not be limited to:

- Estimates and control of costs/budget.
- Estimates and control of programme.

- Definition and monitoring of quality in accordance with the agreed specifications and to the established standards and industry best practice.
- Oversight of a project RAID log (Risks, Assumptions, Issues and Dependencies) and assurance of adherence to the log.

Project level governance

A project board has been established to enable the various workstreams associated with the project to be progressed in a timely and diligent manner.



Risk

The project at this stage contains a large number of risks driven by the assumptions, constraints and unknown elements. The risks rated as high are listed below, a full Risk Register is at Annex F to this report.

Risk Category	Risk Description
Site	The pool of available sites not being fit for purpose or sites that are already tied to Developers or onerous conditions. Inability to find suitable sites that accommodate key criteria for the development e.g. proximity to infrastructure, route through planning restrictions. Risk to programme and delivery of preferred brief.
Financial	Site having constraints that impact proposed use and the cost of developing the facility.
Planning	Protracted and onerous planning requirements and high probability of Planning objection Risk of public perception of safety of this type of building/ local objections to this type of building being constructed in the vicinity.
Financial	The cost of removal and disposal of fly tipping including contaminants e.g. fuel barrels, tyres, underground waste or caches
Stakeholders	Stakeholder approvals processes / requirements affecting timing and the contractor's standard planning / design process
Surveys & Investigation	Identification of unknown asbestos materials/ unforeseen hazardous material see also fly tipping risk
Surveys & Investigation	Brown field sites unknown site conditions - see notes above
Site	The risk of the L&D and FBU not being co-located on the same development site. The risk and impact being loss of economies of scale, replication of facilities, the inefficiency and cost of running two site proposals comprising investigation, procurement and construction with associated additional overhead.
Programme/ Cost/ Procurement	Impact on cost/time/supply chain of Brexit and uncertainty over Brexit.

- Recommendations and Next Steps

- Authority is given to develop the design.
- Funding sought for entire project.
- LCC appointed to manage project in it's entirety under MoA.
- LFRS continue to provide infrastructure support to existing sites.
- LFRS develop contingency for alternative training provision, where required, in the interim.

Annex A – Leicestershire Fire & Rescue Service Business Case Report

Purpose of the Report

To provide further detail and information in relation to the current learning and Development sites. The challenges, issues and future requirements.

To seek approval for further detailed work to commence based on the information and challenges detailed in this report.

Background

Learning and Development Department is based over 5 sites. Each site caters for different learning and development activities and programmes.

- Loughborough Training Centre
 - Leicestershire Fire and Rescue own the freehold to this land.
 - 20 staff are permanently based at this site.
- Shepshed Fire Station
 - Leicestershire Fire and Rescue own the freehold to this land
 - 4 staff are permanently based at this site.
- Southern Fire Station
 - This is a leasehold with a 999-year term which commenced on 1st January 1984.
 - 3 staff members are based at this site.
- Kendrew Barracks, Uppingham
 - Space is rented on this site for a fee of 3k a year.
 - Leicestershire Fire and Rescue are responsible for the maintenance and total safety of the area rented to us.
 - Planning permission is also granted to live fire burns.
- Caterpillar, Desford
 - Space is rented on this site from the land owners.
 - Planning permission is granted up to August 2020, with restrictions.
 - The cost of maintenance and ongoing development in 2018/19 is 20k.

The sites being split necessitates the need for the Learning and Development staff to travel between these sites. This has a cost and clearly an impact on effectiveness due to the amount of time that is spent travelling. It also means that the Management Team spend significant time travelling across sites to ensure that all staff are supported, the distance of the Management Team from individuals does have an impact on the performance of individuals.

Delivery Numbers

Learning and Development deliver varied programmes across the sites, the internal delivery figure for 2018/19 is 375 courses with an expected attendance of 2018 individuals.

Loughborough Learning and Development Centre

Loughborough Learning and Development Centre site is shared with Loughborough Fire Station, Leicestershire County Council Highways and Transport Department, EMAS and Western Power. The site also houses the Fire Training Unit which is used to deliver safety critical Breathing Apparatus competency training with simulated fires and smoke. Programmes such as Road Traffic Collision, Basic Recruit Training Drills and safety critical competency assessments take place on this site. Additionally, more general training takes place with space permitting, examples of this are Fire

Safety Awareness, Community Safety Development Programme, ICT Training, Leadership and Management Programmes and Mental Health Training.

The Learning and Development building has 1 useable lecture room which holds a maximum of 20 participants. There are male and female changing facilities, a separate male toilet and a disabled toilet. A small kitchenette area is provided for course attendees next to the toilet area. A small kitchen is available for permanent instructional staff.

The office space is then split into the Instructional Staff open plan office, Manager's office with 3 Managers currently based there. Reception area which is managed by Business Support Staff.

The majority of Breathing Apparatus training is delivered at Loughborough L&D, therefore, the Breathing Apparatus workshop is a heavily used area. There is one room which stores all the Sets and Cylinders, both clean and dirty. Candidates spend time in this room receiving briefing and teaching sessions as they are wearing their PPE.

Learning and Development also have 2 fully kitted fire engines that are stored securely in the Loughborough Fire Station bays.

Fire Training Unit (FTU)

The Fire Training Unit is 20 years old, it is coming the end of its useable life. The current maintenance contracted that has been re-negotiated with the provider, who has confirmed that the FTU has approximately 18 months remaining of life left in it. Assuming that no unforeseen major failures occur.

Challenges – Loughborough L&D Site

- Due to the space constraints at the Loughborough site, the basic skills i.e. hose running, pumping have to be carried out on regular occasions using the Fire Station Yard as well as the space outside the Learning and Development building. The yard also acts as the car park for the station.
- There is now only 1 usable lecture room due to the increased numbers of instructors required and the space requirements for storage of PPE. The second lecture room is used as storage for personal equipment and a space for staff to have lunch away from their desks. This means that there is always pressure on the use of this room. On a regular basis the BA workshop doubles as a classroom because of the need for more than 1 instructional space.
- In 2017 the Instructor office was updated to improve the working conditions. Smaller desks and a new configuration has allowed for 13 desks to be placed in this room. There is no further space available for storage in this office space.
- Business Support Team manage the reception area; this is also a confined space due to the amount of desks needed. The noise experienced from the yard by Business Support is an ongoing issue. Because they are so close to the yard when fire engines are in use outside for several hours at a time the noise travels into the building. In warm weather this also means they are not able to open windows which has an impact on their health and wellbeing.
- Both Male and female changing facilities do not support the needs of the permanent staff or candidates who attend the centre for training. Both areas are confined in terms of the space it offers people. Instructional staff store their clean uniform in another room due to the lack space available to provide locker facilities for all Instructional staff.
- There is no ability to provide secure locker facilities for candidates who attend programmes onsite within the male changing facilities.

- There is only 1 shower unit available in the male changing room with no private changing facilities.
- The 1 toilet in the male facilities is also used by candidates in their PPE meaning that this clean area is contaminated.
- The female changing facilities are in very poor state of repair with no private changing facilities. The same issue is present for this area as with the male facilities with candidates in PPE using the only female toilet in the building.
- The female changing room also doubles as a store room for the cleaner which reduces the space available significantly.
- The area used for drying the PPE is the buildings boiler room, which is very small and none of the PPE dries effectively due to the cramped nature of the room.
- The limited yard space means that once 2 fire engines are parked on the incident ground outside L&D there is no further space available to run drills.
- Road Traffic Collision training is also carried out at Loughborough, the scrap vehicles used are stored in a compound which is not secure. There have been a number of incidents over the last year with individuals attempting to gain access to the compound to remove parts of vehicles.
- The vehicles have to be manually moved to enable training to take place. The training is generally over a number of days. The vehicles are placed in different crash positions and therefore left unsecure on the yard over a period of time. Although every effort is taken to ensure that they are safe by taping the areas off and securing any potential loose glass the yard is open to the general public and no security exists to reduce the risk of harm to others.
- Caff (foam) training is not delivered currently due to the need to have a safe run off area which does not contaminate water supplies or have an environmental impact. This is an area that the Service has a lack of skill in.
- Hazmat training is delivered at Loughborough L&D Centre, however the simulated chemical and the subsequent smell it produces has caused complaints from local home owners.
- There is currently no space for contaminated equipment to be isolated and cleaned separately. This results in unburnt products of combustion remaining in the sets and entering the atmosphere, learners then sit in the workshop as there is no other dirty class room facilities.
- The breathing apparatus masks are also kept together with dirty masks, there is no suitable cleaning area for the masks therefore the masks are washed outside under the outside tap in all weathers. This results in an increase replacement cycle because appropriate cleaning and drying is not available.

Challenges – Fire Training Unit

- Constraints with the make-up of the site mean that pump training can only take place in certain directions. This means a significant amount of water is continually being sprayed at the Fire Training Unit. This has now had an impact on the Fire Training Unit as water is running into the electrical units causing further power failures.
- Over the winter months the FTU has been unavailable on several occasions due to the weather adversely affecting the ability of the unit to work effectively. This has had the impact that Crews have not received re accreditation in an appropriate environment, if at all.
- The Fire Training Unit is now out of date and is not supported by new technology. An international study published in February 2018 on Occupational Exposure to Polycyclic Aromatic Hydrocarbons and elevated cancer incidence in Firefighters identifies the need to reduce the prolonged exposure to certain environments, thus reducing the exposure to these types of hydrocarbons. The current Fire Training Unit does not have the technology to reduce Occupational Exposure to Polycyclic aromatic hydrocarbons. **Appendix 1/1a**

- The smoke that currently escapes from the Fire Training Unit can be blown over the local housing estate. This has in the past caused complaints to be received by the local community.

Shepshed Fire Station Incident Command Suite

Shepshed fire station currently houses the Incident Command suite on the first floor. This is made up of a small office space holding 6 desks. The Incident Command system room, 3 small training rooms which are used for scenarios as part of the Incident Command virtual system and 2 very small rooms. There is also a small kitchen area.

There is an outside space but as this is a small yard and an operational fire station all exercises for Incident Command are taken offsite.

Challenges – Shepshed Incident Command Suite

- The staff based at Shepshed feel isolated.
- Learning is provided in the boundaries of what is achievable with the space and resources available rather than it being Learner led.
- Command exercises are not delivered at this site due to the space constraint as the yard is very small.
- Significant travel time is also required for individuals to attend this site.
- Development is required for the Simulation system used for Incident Command, however the control room is not large enough to accommodate the developments. This is resulting in a reduced standard of candidate as well as putting the Incident Command Instructional team under undue pressure.
- It is not suitable for medium to large groups and the outside space is very limited.
- Consideration will need to be given to the ongoing costs in relation to the use of Shepshed.
- The Incident Command system needs re developing to be brought up to date with current technology.

Southern Fire Station – Driver Training

Driver Training are currently based at Southern Fire Station. 2 Instructors have an office and a Training Room on the first floor of the building. They also store their vehicles at Southern, which consist of 2 Fire Engines and a Response Vehicle.

Challenges – Southern Station Driver Training

- An LGV Vehicle is used weekly but it cannot be accommodated at Southern due to space constraints. This vehicle is therefore housed offsite at another Fire Station which requires travelling to and from by Driving Instructor pre and post courses.
- There is no connection to Driving an emergency vehicle and basic skills courses. Although Instructional staff try and make the link because of the space constraints across all L&D sites it is impossible to turn theory into reality for Learners.

Caterpillar (Desford) & Kendrew Barracks (Uppingham)

Caterpillar and Kendrew are both used as real Fire training sites. The Service has planning permission to undertake carbonaceous burns at both these sites.

Caterpillar

There is detailed restriction on the months/ days and times that live burning can take place on this site.

The planning consent and the agreement for the use of Caterpillar ends August 2020. We have agreement that Caterpillar will not end our agreement early however we are not able to get the in writing at this stage.

We are however clear that the likelihood for gaining further approval for an extension of the existing planning agreement and the use of Caterpillar as the site is very unlikely due to development being planned for this site. We therefore leave this site August 2020, although will have to stop burning in June 2020 due to the restrictions in place.

Kendrew is not used on a regular basis. In 2017/18 it was only used 4 times. The main issue with Kendrew is that the travel significant travel required to get to the site.

Challenges – Caterpillar and Kendrew

- Caterpillar planning permission is heavily restricted.
- The Service are only able to burn for 10 months of the year and the training is arranged around certain days of the week and weekend and 2 restricted times that burns can take place. There are also restrictions on what can be stored on site.
- There are no facilities available at Kendrew Barracks for showering, a clean area for breaks or welfare.
- There is no classroom facility at Kendrew Barracks so everything happens outside.
- Fire Investigation Training is only able to happen at Kendrew Barracks due to the restrictions in place at Caterpillar.
- Ongoing issues remain with the impact of the burns at caterpillar.
- Development has taken place to improve experience at Caterpillar to attempt to make the scenarios more “real”, however with limited space and such tight restrictions mean that the training is delivered around the use of the site and time granted rather than in a learner centred way. This results in mixed success and levels of knowledge.
- The travel distance to and from Caterpillar and Kendrew is a significant issue. For more than half of the Service it takes 2 or more hours to travel to the site.
- It is highly likely that Planning permission will not be granted or extended beyond August 2020 for Caterpillar as Building work will commence near the space the Service currently uses next year.
- There is no defined guidance for legislation with regard to the duration and frequency of exposure to real fire for Operational staff. This has therefore been risk assessed, see Appendix 2/2a.

L&D Running and Maintenance Costs

Learning and development Staffing and delivery costs

Budget type	Value
Salary – Annual	£1,446,020.00
10 years	£14,446,020.00
Delivery – Annual	£256,350.00

10 years	£2,563,500.00
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Current building and maintenance costs

<u>Details</u>	<u>Estimated cost</u>
Loughborough L&D Centre	
Years 1 & 2 Work remaining	£2,000
Years 3 to 5	£2,000
Years 6 to 10	£22,000
In addition, annual running costs for a 10 year period (including planned maintenance but excluding reactive maintenance costs)	£293,000 a – excludes rates which are combined with Loughborough fire station (assume 0.43% of £60,000 associated with L&DC = £25,900) b – gas and water costs not included as sub-metered from Loughborough fire station (assume £3,900) c – excludes building insurance as combined with Loughborough fire station (assume £1,100) d - excludes Virgin media as combined with Loughborough fire station (assume £2,500)
Shepshed - Incident Command Suite	
Years 1 & 2 Work remaining	£6,000
Years 3 to 5	£4,500
Years 6 to 10	£10,000
In addition, annual running costs (including planned maintenance but excluding reactive maintenance costs)	£30,000, approx. 50%, as the proportion associated to training.
Southern - Driver Training	
Years 1 & 2 Work remaining	£2,700
Years 3 to 5	£0
Years 6 to 10	£3,200
In addition, annual running costs (including planned maintenance but excluding reactive maintenance costs)	£8,800, approx. 4%, as the proportion associated to Driver training.
Kendrew Barracks – Annual rental cost	£3,000
Caterpillar – Annual rental cost	£10,000

Fire Training Unit (maintenance and foreseeable repair excludes reactive maintenance and repair costs)	£20,000
Total	£417,200

Note:

Costs extracted from the 2016 conditions survey carried out by Gleeds for LFRS to bring the premises up to and maintain a reasonable standard i.e. no improvements

1. the figures make no adjustment for inflation over the 10-year period
2. Year 1 = Financial year 2017-18
3. The costs make no allowance for maintenance on the FTU or the live fire training facility

Options for the future

Remaining at Loughborough Learning and Development Centre

If the Loughborough site was to be re developed into a single use Learning and Development facility, there would need to be an increase in office space and training rooms, bringing together all separate sits into one facility. Predictions of the learning and development programmes in the future show an increase need for High rise/ basement training regularly for example. There is also an increased need in broader programmes which meet the changing needs of the Fire and Rescue Service regionally and Nationally. A more blended approach to learning needs to be embedded to meet the strategic objectives. Additionally, the changing role of an Operational Firefighter means more technical and specialist training is being requested and required across the service.

The current foot print of Learning and Development at Loughborough will continue to cause space constraints. Both changing facilities need refurbishment to bring them back up to standard. Additionally, separation of clean and dirty facilities is paramount to ensure we continue to comply with Health and Safety Regulations including the health and wellbeing of individuals.

A new Fire Training Unit would need to be commissioned, to enable more effective and realistic learning this needs to be a fully carbonaceous facility Fire Training unit. Occupational Exposure to Polycyclic Aromatic Hydrocarbons and elevated cancer incidence in Firefighters Scientific study demonstrates the increased and ongoing risks to Individuals from particles that are breathed in over a long period, it can have detrimental effects on an individual's health. This currently effects all staff in the building, including none Operational staff and visitors. Additional space would therefore need to be found to separate the clean and dirty Breathing Apparatus facilities to reduce the risk contamination. A suitable area for cleaning sets and masks must also be provided. Better facilities will increase the standard of the sets and therefore the life of the equipment ultimately reducing the costs of replacements. The introduction of a new Fire Training Unit with up to date technology will significantly reduce the risk to Operational staff and those supporting the programmes.

New technology resolves this issue and turns any leakages into water vapour therefore the impact is minimal to the local community.

It is likely that there would be a reduction achieved in revenue costs associated with the buildings by bring together the staffing sites into one facility.

Bringing the different sections together under one roof, on one site, will significantly improve the learning journey and the end product being a more competent and knowledgeable member of staff.

Commissioning all programmes externally

To commission the generic programmes required for competence the cost would be £1,408,624.00 this is based on the delivery expected this financial year. This does not include Leicestershire Specific programmes related to equipment and operational procedure.

If the decision was taken to commission all programme externally a number of challenges would immediately be apparent.

- Each Fire and Rescue Service has its own nuances; no single provider is able to provide Learning Development bespoke to a particular Fire Service. There would therefore be a need to consolidate and complete conversation programmes on returning into the service.
- There is no internal resource available to address competence issues immediately. For example, a Operational Firefighter is taken off the run for wearing Breathing Apparatus due to competency issues in a re accreditation. Currently with onsite one to one support from competence instructor and a development plan they can be back on the run within 2 weeks. However, if this resource was not available it would have an impact on the availability of appliance because of the reduced numbers of BA wearers. The same applies to Incident Commanders.

Recommendations

Agreement is sought to undertake a further more detailed piece of work to look at the options for:

- Re development of Loughborough L&D site into one single site for all learning and development activities. It is likely that the redevelopment of this site will cost less than a new build. However, restrictions will remain due to the size of the site and there will be limitations remaining.

Further detail is required specifically on:

- Planning enquiries will need to be undertake to look at the potential restrictions and opportunities available for this site.
 - Enquiries and discussions need to take place with the Environment Agency as to the viability to re build a carbonaceous Fire Training Unit on this site. See **Appendix 3** for an example for build, construction and costs related to building a Fire Training Unit.
 - Enquiries will need to be made to Leicestershire County Council as to the possibilities and options of acquiring the full site.
 - Enquiries will need to be made to EMAS as to their plans for moving from Loughborough, it is understood that they are discussing this but it is unclear as to the timescales.
 - A detailed options paper with costed schemes for this site needs to be developed.
- Re-siting of Learning and Development. This option needs to look at bringing together all sites into one new Learning and Development Facility on a new site suitably placed within Leicestershire.

Further detail is required specifically on:

- Site options will need to be progressed.
- Planning and environmental impact enquiries will need to be made for all potential sites.

Further detailed work will also need to take place as to the potential rebuild options.

Annex B – Leicestershire Fire & Rescue Service Scope of Requirements – Fire Behaviour Unit

Basic Layout

Brick built – this will increase the life of the building, completely water tight. It also replicates more closely real fire situations. The floors need to simulate basement and high-rise. Needs to cover commercial and residential type properties.







- Balcony's on the front or rear evaluation – simulation of fire development coanda affect.
- 4 complete floors, with a basement as an additional floor (note this does not need to be a complete floor)
- Flooring – refractory slabs on the floor and tiles on the walls. These types of materials last longer and are replaceable as single pieces rather than a major complete replacement.
- Extraction units that provide positive and negative pressure – simulates wind driven fires.
- Large rooms, that can be compartmentalised.
- Kitchen environment
- Lounge/ dining room environment
- Bedroom environment
- Moveable walls (to enable different training scenarios)
- Simulation to be able to show studio flats
- Basement fire
- High-rise fire

Simulated photovoltaic cells (solar panels) on the roof – to train in the use of the extinguisher.



- Windows – simulate that can be opened in a variety of ways for ladder pitching.
- Heavy duty doors
- Stairs – 1 set through the middle of the building
- Stairs – 2 further sets on the inside of the building at each end.
- External enclosed staircase leading to internal staircase – tactical ventilation and pressurising staircases.



- Loft hatch – external entrance
- Sloped roof for roof crawler
- Attack demo Box.



- Winches on the external staircases – to lift heavy equipment onto the top of the building
- Anchor points for Safe Working at Height
- Methods of entry training for doors
- Simulation area for thatched roof

Fuel

- Gas – LPG – to provide a controlled environment at initial training
- Carbonaceous – further development once initial training has been given
- Cribs and smoke pots for carbonaceous burns
- Photo voltaic cells solar panels
- Ground source heating – re usable energy
- Recycle water ability – re using the fire engine tank water back into the engine.
- Heat – flashover temps 1000 degrees.

Equipment

- Dry Riser inlets and outlets
- Thermal Image cameras
- Temperature monitors

- Emergency stop button – approx. 20 seconds to clear.
- Automatic opening vents
- Extraction units built into the unit

Lighting

- Internal – Emergency lighting

Note – not all rooms will need to do both LPG burn and carbonaceous

External needs

- Hard standing
- Suitable run off
- Enclosed and secure equipment unit
- Dry wood/ dummy store
- Ability for Fire Engines to go all the way around the building.
- Separate control room not attached to the Unit.
- Observation room external for safety and assessor.
- BA set/ store – needs to be secure
- BA compressor/ Servicing room
- Hydrant

Annex C – Leicestershire Fire & Rescue Service Scope of Requirements – Learning & Development Training Centre

Overall

DDA/ Disability access required

Office space

Reception/ Business Support Team

- Reception desk
- An enclosed reception with sight of the front door and remote unlocking of the front door.
- Seating area for visitors to hold 6 seats.
- Business Support team to have an open plan environment closed off from reception but to be able to see it.
- 6 desks – all staff work across the week and this won't change so hot-desking will not work for this team. This includes the Business Support Team Leader.
- Space for a photocopier/ printer
- Signing in/ out board to be in reception for instructional staff.
- Secure storage room to be accessible from Business Support team.

Managers offices

- 4 Managers offices
 - o 1 for 2 Programme Leads (Station Managers)
 - 2 desks
 - A meeting table
 - o 1 Managers office to satisfy a disability responsibility for the Learning Delivery Manager.
 - 1 desk
 - A meeting table
 - Reasonable adjustment – interactive board – therefore the ability to sight this on the wall.
 - o 1 Managers office for the head of Learning and development
 - 1 desk
 - A meeting table

Instructional Staff office

- Open plan office for 23 instructional staff.
- Hot desk arrangement will be implemented – suggested ratio 8-10 initially
- Desk set up – adjustable ICT equipment
- Desks and chairs to be adjustable
- Each instructor to be allocated 1 set 3 drawer under desk cabinet
- Storage space – filing cabinets to allocate storage for instructional staff.
- Photocopier/ printer space
- break out spaces (pods) – 3 confidential spaces for phone calls and one to one discussions.

Incident Command control room

- Secure/ lockable room.
- Desk that wraps around 2 walls with - 4 large computers screens mounted onto the walls above.
- 2 desk top computers will be on the desk
- Computer server space — ideally it would be better to be in a separate air conditioned space the size of the server is D 1m + H 2.2m + W 700mm
- Meeting table for observers
- Microphone system to be able to talk to multiple rooms individually.

Kitchen/ break out area

- Kitchen area for candidates and instructional staff.
- Hot and cold drink making facilities
- Full size fridge and freezer
- Seating area for lunch breaks

Breathing Apparatus rooms

BA Workshop (dirty)

- Needs to be able to hold 30 sets and cylinders
- 12 high desks
- BA compressor
- Sink unit to wash facemasks

Dry room

- To dry fire kit and store – external access is required for laundry to be collected.
- Fire kit storage

Clean room

- To hold clean BA equipment and uniforms

Training rooms

- They will need to accommodate 15 people as delegates plus 2 instructors to hold lectures. Ideally located next to each other with the ability to join 2 together when required.
- 4 small rooms which would hold 6/8
- Interactive screens that are free standing so that they can be moved round.
- Wall mounted curved simulation screen.
- 6 person round table space to utilise the rooms for meetings if required.

Storage

- Clean uniform storage for 20 uniform staff.
- Personal lockers for all staff.
- Storage for L&D equipment – equates to a full sized store room with shelving.

Washrooms

- Gender neutral washrooms including disabled access toilet facilities.

Male and female lockers

- Male and female showers and toilet facilities.
- Lockers within the shower rooms for course candidates.
- The lockers need to link directly to the dirty BA space.

Externally

- Incident ground – larger space than current Loughborough site.
- Scrap car compound for 6 cars and a tractor unit. (accessible without disrupting fire ground)
- Garage space/ secure area for 3 engines and a response car. This will include electrical supply with an additional space for capability to deliver internal training for road traffic collision about the size of 3 cars also will require heating.
- External secure storage for training equipment – this needs to be the size of the BA workshop but can be a separate container unit and doesn't need heating etc... this will store rope, harnesses, and other specialist kit

Car Parking

- 30ish spaces for L&D staff
- Visitor spaces 20 at least because of course sizes.

Annex D – LFRS L&D and FBU Detailed Requirements Justification and Priorities Document – MoSCoW Analysis

KEY MoSCoW

M = Must Have

S= Should have

C= Could Have

W= Won't Have

Fire Behaviour Unit		
Requirement	Justification	MoSCoW
Brick built	Realistic training. Simulate basement and high rise. Replicate commercial and residential property. West Mids only use metal container multi storey for command and control training. Live Firefighter training started out in containers in Sweden, whilst this took us so far in controlling the environment with the gas cooling technique, the next step was to replicate those conditions in buildings, as this is what Firefighters will be facing operationally.	M
Multi storeyed, preferably 4, with a basement.	Not having the ability to train Firefighters in this scenario after recent tragic events at Bethnall Green and The Balmoral Bar results in Firefighters not having the most valid and realistic training to ensure their safety at incidents of this type.	M
Able to replicate commercial and residential.		M
Able to replicate kitchen, lounge, dining room, bedrooms and studio flats.		M
Vehicular access all around the FBU.		M
Balconies to simulate fire development coanda affect.	Coanda effect is when a jet flow attaches itself to a nearby surface and remains attached even when the surface curves away from the initial jet reaction, the ability for Firefighters to observe these conditions in a controlled environment cannot be underestimated. This phenomena is highlighted in tragic events such as Grenfell Tower, Lakanhall House and Kings Cross to name a few.	M
Refractory slabs on the floor and tiles on the walls	Required around the floor and ceiling where the fuel phase fire is ignited	M
Extraction units that provide positive and negative pressure – simulates wind driven fires.	Provide positive and negative pressure – simulates wind driven fires Extraction unit unsafe as personnel may get between fire and vent, dangerous. West Mids do not use their mechanical ventilation, rely on natural ventilation. Wind driven fires currently can only be demonstrated with a carbonaceous burn and a fan. Carbonaceous burns gives Firefighters the most realistic experience. Currently there are extraction units at Loughborough with synthetic smoke and LPG which is less of a risk to all than carbonaceous burns.	M/S
Large rooms, that can be compartmentalised using steel plates to vary the layout.	If the facility is designed to maximise its use for various scenarios, then this may not be a consideration for a number of years.	C
Simulated photovoltaic cells (solar panels) on the roof.	Specific PV fire training. This is an emerging risk, currently the Aerial Ladder Platform (ALP) is the only appliance with the extinguishing media for PV cells, the opportunity to use this in a scenario that the ALP would be used in would be beneficial to all operational personnel	S
Windows that can be opened in a variety of ways for ladder pitching.	Offers the benefits of realistic gain entry scenarios as Firefighters now assist EMAS in gaining entry as the Police have withdrawn from doing this.	M/S
Heavy duty doors for method of entry training.	Fire, heat, smoke heavy duty doors are a must, this could also assist with Method of Entry Training	M
1 set of stairs through the middle of the building.	Safe access and egress, also for varied scenarios, and points of refuge for Instructors who site conditions.	M

2 further internal stairs at either end of the building.	Safe access and egress, also for varied scenarios, and points of refuge for Instructors who site conditions.	M
External enclosed staircase leading to internal staircase.	Safe access and egress, also for varied scenarios, and points of refuge for Instructors who site conditions.	M
Heavy duty doors	Fire, heat, smoke heavy duty doors are a must, this could also assist with Method of Entry Training	M
Loft hatch.	Loft hatch is used operationally to check for fire spread on common roof voids. Also staff are facing fire in loft spaces due to the cultivation of illegal drugs.	S
Attack demo box.	As long as the wet building can provide this phenomena, an attack box is not required	M
Pitched and flat roofs.	Not putting a pitched roof on, results in not being able to deliver basic ladder pitch training, a second venue would be required.	M
Winches on the external staircases	To lift heavy equipment onto the top of the building. Forklift is a must, for wood, the addition of winches for dummies weighing up to 50kg as we have now is the same.	M
Anchor points	Safe Working at Height. The new FBU must be for multi use to reduce the need for further structures for other workstreams, this also gives the realism as the building would replicate what Firefighters would be faced with operationally.	M/S
Methods of entry training for doors	Significant outlay if we are unable to combine this with the new build. The Police are currently not approachable to allow us to be trained at their facility	M
Simulation area for thatched roofs	This could be part of the next phase	S
Cribs and smokepots for carbonaceous burns	Not a priority as the burn areas are floor, wall and ceiling	C/W
Sustainable	PV Cells Ground source heat pump Ability to recycle water. Non-negotiable	M
Dry riser inlets and outlets.	To be able to practice the set up and use the facility for a carbonaceous burn as part of a high rise scenario is a must and links in to the command and control element.	M
Heat – flashover temps 1,000 degrees	Fire phenomema requirement, hence the need for refractory slabs on burn areas	M
Thermal Image cameras.	Ideally set into walls, but worst case can use hand held by instructors. This would assist with the Risk Assessments and evidence for competence and may also reduce the exposure for Instructors.	M
Temperature monitors.	Health and Safety	M
Automatic opening vents.	Would be of use if carbonaceous only.	M
Emergency stop button	If no LPG, how would this work? With feedback from Norfolk Fire and Rescue, any tender should include the requirement for a facility that is LPG and Carbonaceous.	
Extraction units built into the unit.		
Emergency lighting.	Health and Safety	M
Separate control room not attached to the FBU.	Potentially co-located with L&D facility. The control room attached to the FTU at Loughborough has caused issues with its proximity, the control unit needs to be located in a position that meets the health and safety requirements, without causing potential issues for its operators.	M
Hard standing	To run 360° and 5m wide to allow pump access	M
Suitable run off	To include interceptors	M
Enclosed and secure equipment unit	Potentially co-located with L&D facility	M
Dry wood/ dummy store	Potentially co-located with L&D facility. Could be covered not in a container as this would reduce the need for manual handling	M
Observation room external for safety and assessor.	Potentially co-located with L&D facility.	M
BA set store suitable for a storing, servicing and refilling the BAs.	Potentially co-located with L&D facility.	M
BA compressor/ servicing rooms	Potentially co-located with L&D facility.	M
2 x hydrant diagonally opposed.		M

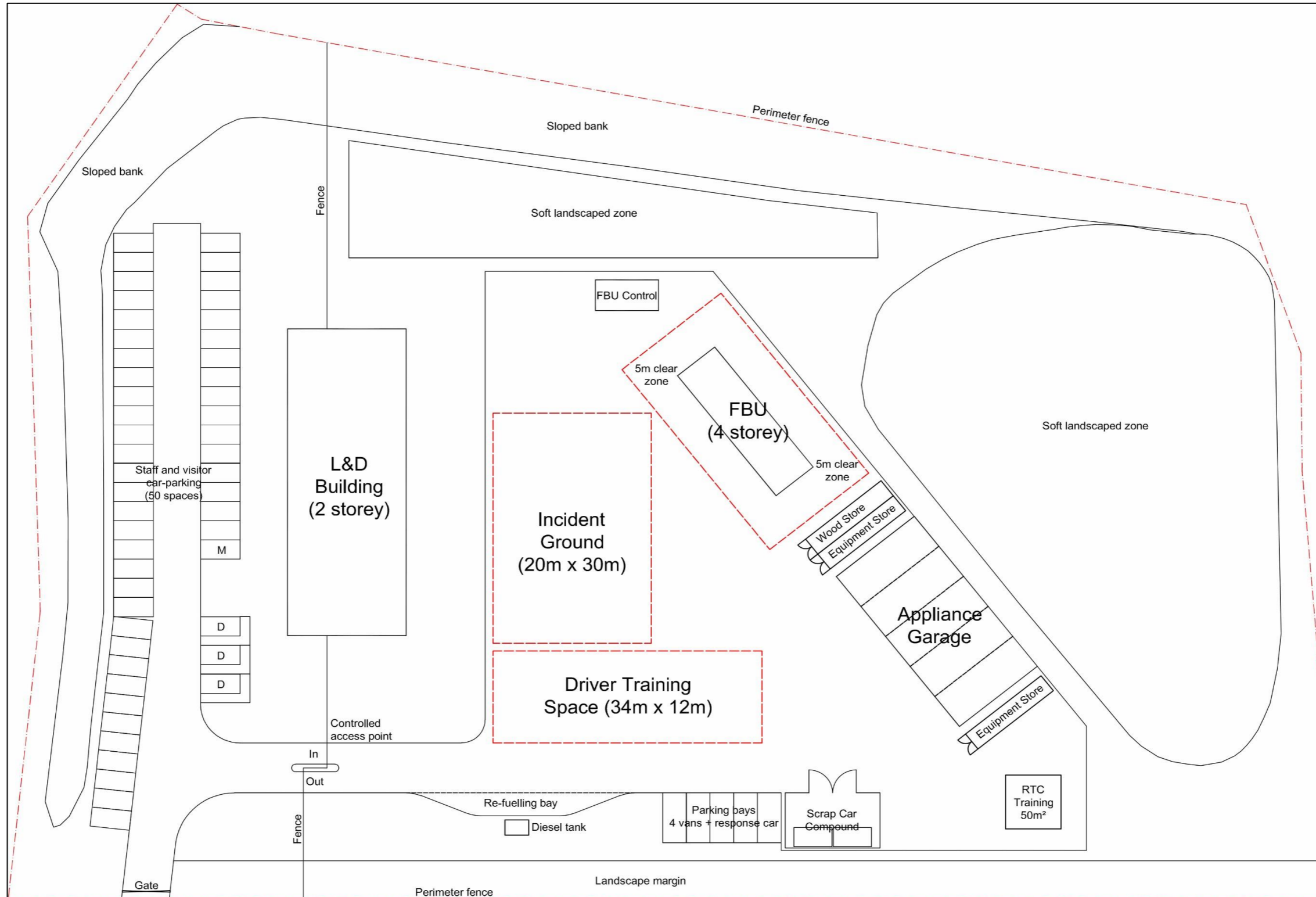
Training emergency	No mechanical means of dealing with real time emergency. Design of building needs to meet this need.	M
Confines space training element	If not considered, training offsite which creates further issues	M
Dirty classroom	Potentially co-located with L&D facility. Decontamination area/ room	M
Storage for timber	Not necessarily covered	M
Storage for 8 sets of BA	Space for storage needs to be for more than 8 sets as course maxima is 10 which could rise to 12 plus. Instructors maximum of 6.	M
POL storage	Off the shelf container storage	M
Diesel storage and pump	Potentially co-located with L&D facility	M
Washdown point		M
West Mids FBU	Almost 30 years old, still functional and working well. Shuts down for 2 weeks a year for maintenance. Carried out during July – September	M
Leadership and Development Centre		
Justification	Justification	MoSCoW
Reception and Business Support team are for 10 people.	The BS team is a vital function of L&D.	M
Office space for 4 managers including a meeting area.	The managers require space to discuss freely the day to day business in a confidential space. In addition, one of the managers has a reasonable adjustment to workplace which requires a single occupancy office.	M
Office for 23 instructional staff, consider hot desking due to number of staff in at any time.	Instructor numbers are growing this provision is the minimum requirement; we currently have 17 full time instructors and 16 part-time instructors. There is a business case being submitted for further full-time staff due to the current challenges in meeting delivery.	M
Incident command control room.	This is essential for delivery of incident command at all levels.	M
Computer server space climate controlled room.	This is essential for the operation of the Command Support Suite.	M
Break out area.	Allows a quiet space for staff to work in, hold meetings and as a space to deliver feedback to learners in a private location	S
Kitchen area for candidates and instructional staff.	The provision of a self-service kitchen area would allow L&D staff to store their food and prepare meals. A less equipped self-service area would allow learners the opportunity to store food and heat it if required.	M for L&D staff S for learners
Seating area for lunch breaks.	The provision would allow all staff to have lunch away from their desk or classroom.	M
BA set store suitable for a storing, servicing and refilling the BAs.	Facility to store and maintain the L&D BA sets, of which we have approx. 35 sets. And store and refill approx.	M
Drying room.	Facility to dry staff and learners fire kit once wet.	M
Clean room.	To provide a contamination free environment for staff and learners to go through after removing dirty / contaminated PPE in to the main L&D facilities and changing areas.	M
Training rooms for varying delegate numbers.	The space required for theoretical training and Incident Command training is the minimum requirement, this does not allow for future expansion of the current delivery requirements.	M
Dirty classroom.	This facility allows for teaching of micro sessions without having to fully remove PPE or cross contamination of the main L&D facilities.	M
ICT classroom.	The current facility is at SHQ, this is permanently set up with computers but only facilitates 6 learners, the space requested at the new site would hold 8 which would maximise the capacity of the training course whilst at the same time freeing up a facility at SHQ for meeting space, which is currently in high demand.	M
Storage for personal equipment as well as training equipment.	Storage space is required for the various training resources used in the delivery of training. Storage of PPE for staff and learners as required.	M
Diesel fuel station.	Allows the ability to refuel from site rather than off-site which saves both time and money.	M
Gender neutral washrooms/disabled access toilet facility.	Legal requirement.	M
Male and female locker, shower and toilet facilities.	Provision for staff and learners to store personal kit.	M

	Allows for individuals to shower post training or after coming in to contact with contaminants.	
Covered but not enclosed incident training area, additionally used for external physical training.	<p>Under cover area to deliver training which protects learners from the elements and maximises the learning.</p> <p>Use of the facility to complete physical training for recruits as part of their learning journey and maintenance of fitness requirements.</p> <p>This would be built with a pitched roof, which would then be used for elements of the Working at Height training.</p>	M
Internal gym.	Facility to provide operational staff with the ability to maintain their fitness levels as well as allowing all staff and learners the opportunity to workout which has a direct positive impact upon health and well-being.	M
Scrap car compound for 6 cars and a tractor unit.	Storage of vehicles used for RTC training in a secure compound, the space is reduced as there are two 3 car racks built which allow the stacking of cars.	M
Garage space secure area for 4 fire appliances, a response car and a LGV driver training vehicle.	The vehicles are not operational resources so could be stored outside, however, the equipment stored on them requires being charged and also requires secure storage for the equipment on a minimum of the 4 appliances.	M for 4 appliances
Car Parking up to 50 spaces.	The parking requirements would greatly depend upon the location and access to public transport and / or off-site parking.	S
LGV manoeuvring area	Provide a facility to complete the reversing exercise for LGV training on-site, this could be doubled up as an overflow parking area when not in use. Current facility used is either Derbyshire FRS or Notts FRS.	S

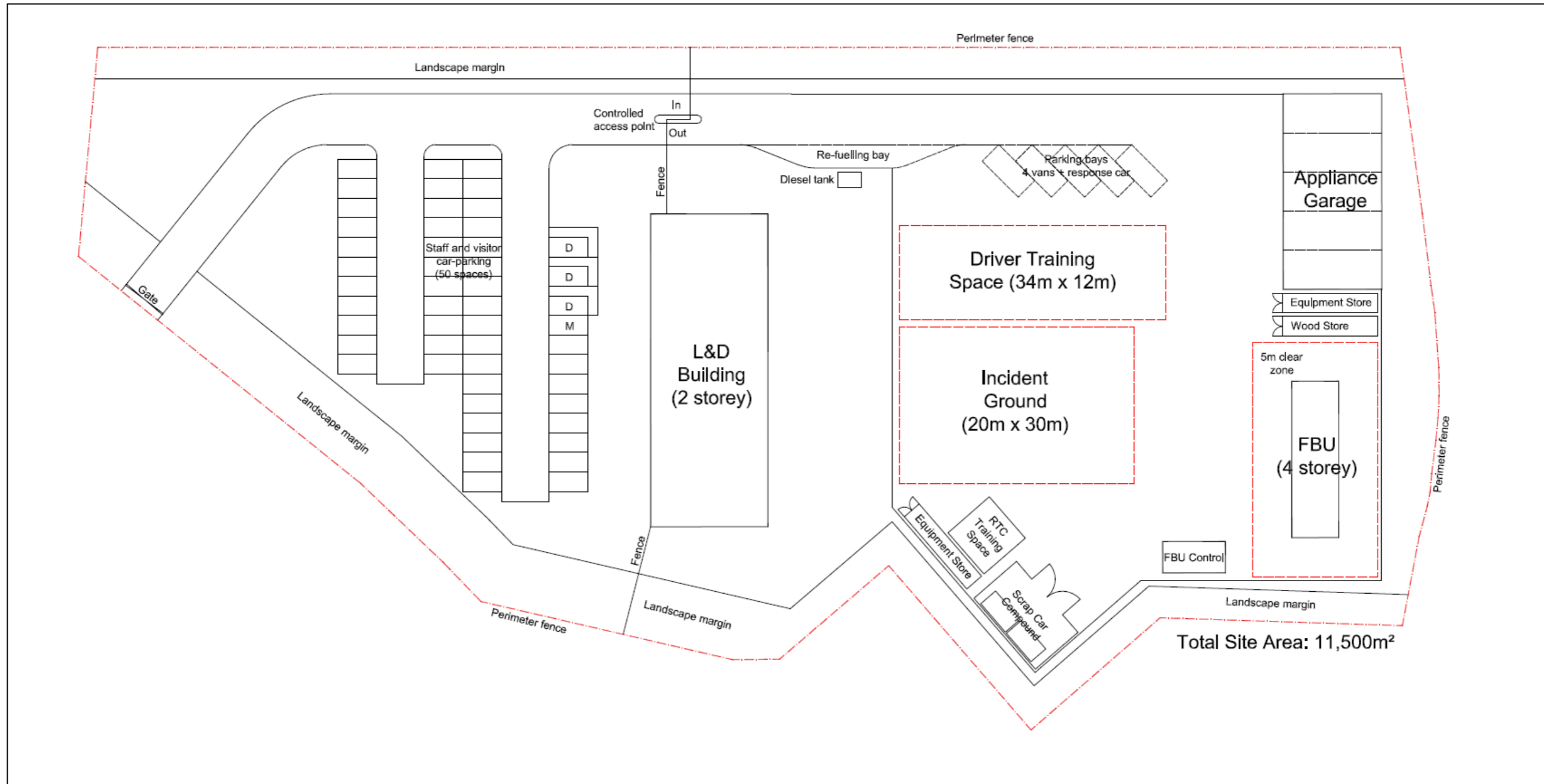
Annex E – Options Block Layout Plans

The following block layouts have been drawn up by an architect based on the m² from the Schedule of Accommodation and using indicative sites. The sites represent a c4 acre site and a c2.5 acre site to show how the requirements would fit into that area and are indicative; they are not proposed layouts.

c4 Acre Site



c2.5 Acre Site



Annex F –Risk Register

Ref	Risk Category	Risk Description	Current Status	Likelihood (1-5)	Cost Severity (1-5)	Time Severity (1-5)	Cost Severity (1-5)	Cost	Time	Overall	Risk/Mitigation Actions
1	Brief/ Scope	Defining the brief: Co- ordinating stakeholders, including specialists, briefing requirements & priorities. Complexity and time taken to provide the most efficient briefing solution. Challenges of one size does not fit all. Risk of aspiration exceeding budget	Open	3	3	2	9.00	Medium	Medium	Medium	Early and detailed stakeholder engagement, including feedback from implementation specialists from LF&R, to establish brief requirements. Development of the justification and priority schedule. LF&R to identify and authorise LF&R key owner(s), to make decisions. Utilise lessons learned and feasibility considerations from other F&R comparable projects. Engage to understand & incorporate LF&R specialist personnel (actual experience) feedback and play back /test assumptions from the information provided translated into brief and scope. Early definition and testing of the budget.
2	Design	Developing an efficient design that most effectively delivers the key specialist requirements and to provide best value solutions, the risk in not achieving this requirement.	Open	2	2	2	4.00	Low	Low	Low	Detailed liaison with F&R specialist stakeholders, for practical and complimentary solutions, that reflect industry 'real' experience. LF&R canvassing feedback information during Aug 2019 to inform the brief.
3	Brief/ Scope	Over specifying the brief in terms of facility, provision and area required.	Open	3	3	3	9.00	Medium	Medium	Medium	Constructive review and challenge of the brief and scope, which includes stakeholder justification, comment and prioritisation. Where feasible, to reflect future and flexible ways of working and compliance with changing and likely future legislation requirement e.g. provision and management of clean facilities, health in the workplace legislation.
4	Design	Design not taking due consideration to reasonable future proofing , flexible ways of working and efficiency in multi use areas.	Open	3	3	3	9.00	Medium	Medium	Medium	Investment of time and consideration to explore and test these requirements with LF&R stakeholders.
5	Site	The pool of available sites not being fit for purpose or sites that are already tied to Developers or onerous conditions. Inability to find suitable sites that accommodate key criteria for the development e.g. proximity to infrastructure, route through planning restrictions. Risk to programme and delivery of preferred brief.	Open	4	4	3	16.00	High	Medium	High	Identify say 2 site briefs aligned to options appraisals to be prepared, reflecting priority brief requirements and to be scalable Silver or Gold e.g. Gold site equates to provision for all parameters, preferred briefing solution, optimum site area, some future proofing provision, most efficient building massing, supports cost effective business case and budget, proximity to infrastructure, minimising Planning concerns etc. Develop alternative site finding specification (Silver) defined as the baseline, operational brief. Extend search from single land agent. TPM challenged and raised concern with the land agent (LA): risk being the principles of open and fair procurement meaning ideal sites may be dismissed based on the suitability of the developer tied to that site. LA confirmed that the ideal scenario is not developer tied, advised this is unlikely to be achieved unless a quasi site (eg farm) is found, creating potential risk issues around abnormal service requirements. LA indicated most sites are developer tied and confirmed commitment to maintaining best value. LA advised that if the sites were procured direct there would still be developers profit element payable therefore no gain. Noted priority being to agree user requirements and specification to facilitate appropriate site search and acquisition.
6	Brief/ Scope	The multi purpose use of the facility causing practical operational issues e.g. smoke from FBU impacting 'clean use' no smoke environment requirements of the L&D training facility.	Open	3	2	2	6.00	Medium	Medium	Medium	Early feasibility 'block' design a to interpret the brief, undertaking block spatial planning and inter dependency , adjacency requirements.
7	Financial	Site having constraints that impact proposed use and the cost of developing the facility.	Open	4	4	2	16.00	High	Medium	High	Undertake early surveys and investigations to verify
8	Statutory Bodies, Utilities	Existing site services, namely Gas, Electricity, and water are assumed to be of sufficient capacity to serve new buildings. There us s a risk that the utilities services may require upgrade- see below	Open	3	3	2	9.00	Medium	Medium	Medium	Undertake early surveys and statutory enquiries and provision in order of cost plan under risk until defined / mitigated.
9	Statutory Bodies, Utilities	Power infrastructure not having capacity to support the development , risk of additional costs with upgrades, as provision cannot be secured until orders	Open	3	3	3	9.00	Medium	Medium	Medium	Make provision in the order of cost plan and monitor. M&E consultant to engage with WPD / other early and stay in touch. Look at devolving risk to a D&B contractor.

		are formally placed with Statutory suppliers.									
10	Statutory Bodies, Utilities	Drainage implications existing / proposed impacting on design and cost	Open	2	2	2	4.00	Low	Low	Low	Undertake early surveys and drainage searches,
11	Surveys & Investigation	Acquisition site having unknown issues & constraints that substantially impact on aspiration, design, cost and programme. Identifying site constraints and hidden costs later in the process when committed to the site in terms of budget , programme and acquisition	Open	3	4	3	12.00	Medium	Medium	Medium	Define a sequence of surveys and investigations, e.g. pre acquisition 'light' desk top reviews and post acquisition comprehensive suite of surveys and investigations to identify risk impacts and cost to mitigate within the development. Reflect in the order of cost plan, informing the budget and provision of risk allowances. e.g. Flood risk , Utilities (substation/ grid), infrastructure capacity, highway / access impacts, drainage capacity , overhead or underground power cables, sewers and legal easements. CIL charges etc
12	Planning	Protracted and onerous planning requirements and high probability of Planning objection Risk of public perception of safety of this type of building/ local objections to this type of building being constructed in the vicinity.	Open	5	3	5	15.00	High	High	High	Appoint a Planning consultant, early local engagement and relationship building, to manage any negative perception of the facility. Appoint specialist advisors in support of proposals e.g. H&S
13	Financial	Risk of the RIBA 0 feasibility work, not reflecting the additional scope opportunities, aligned to business case income generation and 'cost in use' benefits.	Open	3	2	2	6.00	Medium	Medium	Medium	Innovative early consideration of revenue generating facilities and cost in use benefit that may support an increased budget provision.
14	Surveys & Investigation	Contaminants and geotechnical ground conditions impacting design and cost and programme.	Open	3	3	3	9.00	Medium	Medium	Medium	Geotechnical investigation
15	Financial	The risk of not achieving a confirmed budget that reflects the required essential (baseline) brief / scope of development works. Risk of developing the brief and design beyond available budget.	Open	3	4	2	12.00	Medium	Medium	Medium	Early action to define and test the brief and scope of works and undertake early order of budget costing. Develop brief and scope aligned to justification and priorities schedule. Undertake early options appraisals with budget costs. Develop a costed risk schedule to inform the level of 'Risk' contingency that should be factored into the budget and cost reporting.
16	Financial	The risk of change increasing costs beyond agreed budget and design development contingency figures.	Open	3	4	2	12.00	Medium	Medium	Medium	Implement change management process early in the RIBA governance stages and work to agreed design freeze milestones. Rigorously implements RIBA stage approval gateways to ensure brief and budget remain aligned an in line with LF&R requirements/ authorisation.
17	Strategy & Programme Management	Continuing business as usual operations 5 sites; -Loughborough Training Centre -Freehold (FH). -Shepshead Fire Station-(FH) -Southern Fire Station- Leasehold, 999 yr 01.01.84 (LH) -Kendrew Barracks, Uppingham-Rented space (RS) -Caterpillar, Desford- (RS) Planning permission until Aug 2020 Existing LF&R location / sites have critical dates pending e.g. current planning approvals to operate fire scenarios expiring or lease considerations. These dates / critical points do not align to the likely development delivery programme.	Open	2	2	2	4.00	Low	Low	Low	Define the critical path master programme and options for the proposed FBU and L&D training facility development. Identify the key dates operational matters for the existing estate. Develop a strategic plan for the existing 5 site estate, (e.g. maintain in use , potential disposal etc aligned to a programme) Undertake Programme Management activity; Reference, the operational strategic programme to the Master development programme, identify a manage the priority of works e.g. early stage build of the FBU or interim actions as required e.g. short term extensions to existing planning approvals (approval to burn)
18	Financial	The cost of removal and disposal of fly tipping including contaminants e.g. fuel barrels, tyres, underground waste or caches	Open	4	4	2	16.00	High	Medium	High	Undertake early pre acquisition surveys to verify. Make realistic £ allowance in purchase price reduction and / or order of cost plan to remove in line with legislation. Survey at purchase completion Ensure provision of security post complete, manage and monitor.
19	Stakeholders	Stakeholder approvals processes / requirements affecting timing and the contractor's standard planning / design process	Open	4	2	4	8.00	Medium	High	High	Put in place an agreed governance / client and milestone/ gateway approval process with agreed timescales.

20	Equipment/ RDD	LFRS to confirm what equipment and fittings they are expecting to be provide through the contract and what would potentially be defined and source directly by LF&R e.g. ICT and FF&E. Risk if not clearly defined 'project' budgets may be impacted.	Open	2	2	2	4.00	Low	Low	Low	Engagement to agree methods of procurement and delivery and relevant owners for the principle overall project elements to allow budgets to reflect methodology. E.g. FF&E & ICT may be directs through LF&R.
21	Surveys & Investigation	Identification of unknown asbestos materials/ unforeseen hazardous material see also fly tipping risk	Open	4	4	2	16.00	High	Medium	High	Undertake relevant surveys to verify. Make realistic £ allowances in the order of cost plan to remove in line with legislation.
22	Programme	Significant risk that the timescale for RIBA 0 and potentially RIBA 1 is too tight and will therefore impact on the quality of the investigation and output.	Open	4	3	3	12.00	Medium	Medium	Medium	Facilitate an appropriate timescale to undertake RIBA 1. Review team to be cognisant of limited timescale for preparation of RIBA 0 information.
23	Surveys & Investigation	Ecology impacting programme and addressing protected species	Open	3	2	3	6.00	Medium	Medium	Medium	Procure ecology and arboricultural surveys early in the pre development process.
24	Surveys & Investigation	Brown field sites unknown site conditions - see notes above	Open	4	4	3	16.00	High	Medium	High	Undertake relevant surveys to verify. Make realistic £ allowances in the order of cost plan to address.
25	Surveys & Investigation	Ground water and spring conditions	Open	2	2	2	4.00	Low	Low	Low	Investigate in line with flood risk assessments
26	Communications	Press and public relations if not actively managed negative communication could take precedent.	Open	3	1	1	3.00	Low	Low	Low	Develop a stakeholder and communications plan. Proactive plan and management of a defined communications strategy and plan. Confirm LF&R key accountable person to facilitate / manage this aspect supported by LCC as required/ directed.
27	Governance	Programme Management good governance for successful delivery of the development project not being achieved.	Open	2	2	3	4.00	Low	Medium	Medium	Liaise with LF&R programme contact --- implement best practice programme/ project management on delivery of the project.
28	Financial	Sustainability; Risk of capital cost aligned to sustainability benefits. Budget not meeting environmental brief aspiration.	Open	3	3	1	9.00	Medium	Low	Medium	Identify key environmental and sustainability brief / scoping requirements in early RIBA stages and make provision in the order of cost plan.
29	Programme	Risk of programme over-running, causing financial increase and operational impact.	Open	3	3	3	9.00	Medium	Medium	Medium	Prepare realistic programme at initiation of the project. Actively manage reporting progress to programme. Implement audit and governance to review and secure formal client authorisation to pass through RIBA stage gateways. Actively monitor and report during the RIBA stages. Reflect current programme aligned to brief, design, procurement and delivery methodology and cost at gateway approval reviews. Reflect impact of programme change in the change management process ,review and authorisation.
30	Site	The risk of the L&D and FBU not being co-located on the same development site. The risk and impact being loss of economies of scale, replication of facilities, the inefficiency and cost of running two site proposals comprising investigation, procurement and construction with associated additional overhead.	Open	3	5	4	15.00	High	Medium	High	Prioritise on single site, efficient brief. Brief land agent to search site where the size will accommodate both facilities.
31	Programme/ Cost/ Procurement	Impact on cost/time/supply chain of Brexit and uncertainty over Brexit.	Open	5	3	3	15.00	High	High	High	Undertake BREXIT impact assessment over the next three months as Brexit situation crystallises. Continue to monitor impact on supply chain and procurement of Brexit in inflation figures in cost plans etc.

32	Procurement	Risk of FBU specialist companies dropping out of tender due to potential complexity of brief and potentially not having the required expertise for turnkey solutions.	Open	4	3	3	12.00	Medium	Medium	Medium	To inform key procurement decisions regarding form of FBU, undertake robust scrutiny of and dialogue with specialist FBU suppliers.
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Annex G – Programme (Overview)

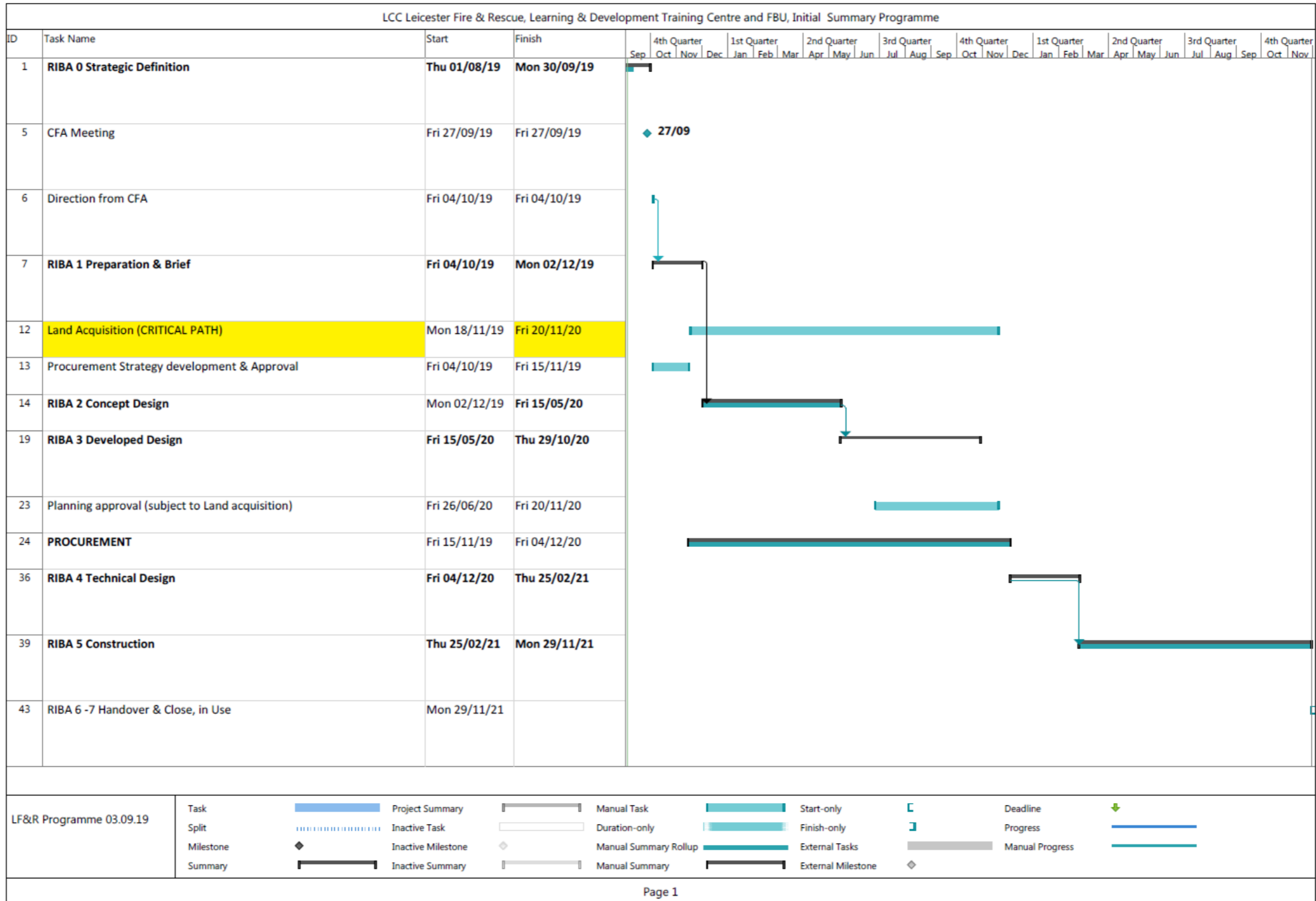
At this stage a detailed programme is not realistic, however many assumptions over time can be made and are represented in the indicative programme below. An indicative summary programme has been prepared, with the overview information as available at RIBA Stage 0.

The detailed Master Programme will be developed in the later RIBA stages, which will reflect the acquisition site selected however a number of assumptions have been made and are listed below. It will not be feasible to complete the procurement and Design and Build tender process until the site has been secured, this is identified on the programme as a critical path programme item.

Programme Notes;

- Site Procurement. This is estimated to take up to 12 months following advice of the site agent employed by LFRS.
- LCC Procurement Process. This is estimated to take 3 – 9 months following the advice of the Head of Procurement from LCC. This is end date driven aligned to site acquisition completion, a longer overall period is shown in the programme.
- Construction. This is estimated to take 9 months following assessment of similar builds, however this estimate does not take account of the following factors/ considerations;
 - Site abnormalities (ground and site condition, highway and infrastructure, utilities, planning).
 - Implementation of an enabling contract.
 - Period required post practical completion for Leicester Fire and Rescue to undertake any required direct contracts (Furniture Fixtures and Equipment (FF&E) and Information Computer Technology (ICT) installations, period for decanting into the facilities and any extended specialist training requirement.

Overall the indicative programme period is just over 2 years. It should be noted that this programme could be significantly improved with a faster site acquisition programme.



Annex H – Photographs

Oldbury Fire Behaviour Unit







Photo List:

- 1 – Rear Elevation
- 2 – First Floor Elevation
- 3 – Confined Space Facility
- 4 – Alternative FBU from Stacked Containers (top left of photograph)
- 5 – FBU in operation (extent of smoke)
- 6 – Refractory slabs
- 7 – Upper floor access balcony
- 8 – FBU in operation
- 9 – Observation and Management cabins
- 10 – Cylinder storage
- 11 – Medical Unit
- 12 – FBU door and eco drain
- 13 – Wash facilities