Area Schedule

Workstation based on 2.4m high ceiling has a plan area of 4.6m²

This will give a volume of 11m³ per person which is the minimum HSE volume

Description	Number	Width	Depth	Total Area
Reception	1.00	5.00	4.00	20.00
Waiting area	1.00	8.50	7.00	59.50
Workstations	100.00	2.00	2.30	460.00
WC's				
Male WC's	4.00	3.00	4.00	48.00
Female WC's	4.00	3.00	4.00	48.00
Disabled User	4.00	1.60	2.20	14.08
Changing Place	1.00	3.00	4.00	12.00
Kitchenettes	5.00	3.00	3.00	45.00
Storage	10.00	3.00	3.00	90.00
Circulation	4.00	2.00	50.00	400.00
Lifts	2.00	2.50	2.50	12.50
Stairs	3.00	3.00	6.00	54.00
Plant	2.00	4.00	6.00	48.00
Copiers / Printers	5.00	2.50	3.00	37.50
Meeting rooms				
4 person	10.00	3.50	4.00	140.00
6 person	8.00	3.50	5.00	140.00
8 person	4.00	3.50	6.00	84.00
10 person	4.00	3.50	7.50	105.00
20 Person	2.00	7.00	8.00	112.00
Council chamber	1.00	14.00	25.00	350.00
Walls / partitions at 5%				105.00
Total				2384.58

Suggested initial working total GIFA: 2400m.sq. open for discussion amendment throughout the iterative process.

A+G
ARCHITECTS
EST.1934

chord consult
Engineering harmony

Charnwood Borough Council

M&E Options
Chord Ref: 23020

chordconsult.co.uk

NOTTINGHAM | MILTON KEYNES

1.0	**Site A**	**3**
1.1	Site A – New Build	3
2.0	**Site B**	**3**
2.1	Site B – Option 01 – Light Refurb	3
2.2	Site B – Option 02 – Separate Buildings B&C	3
3.0	**Site C**	**4**
3.1	Site C – Option 01 – Light Refurb as existing	4
3.2	Site C – Option 02 – Creation of New 'Front of House' area on Ground Floor	4
3.3	Site C – Option 03 – Separate Buildings B&C	4
3.4	Site C – Option 04 – Separate Buildings B&C – Vertical Separation	4
4.0	**Site D**	**5**
4.1	Site D – Option 01 – Refurbishment of Existing for Sub-letting	5
4.2	Site D – Option 02 – Refurb Existing and Build New Extension	5
4.3	Site D – Option 03 – Demolition and New Build Block	5
5.0	**Site E&F**	**5**
5.1	Site E&F	5
6.0	**Site G**	**6**
6.1	Site G	6
7.0	**Benefits of new technology**	**7**
7.1	Gas vs ASHP vs GSHP	7
7.2	Photovoltaics (PVs)	8
7.3	Energy Benchmarking – Savings	9

1.0 Site A

1.1 Site A – New Build

The proposed option for Site A includes a new build office block on existing Southfields Road car park, allowing a full energy efficient design and providing more autonomy over the design parameters that contribute to a low carbon scheme.

A new build proposal allows the design team total control over the development, whereby a fabric first approach can be utilised and incorporated, to minimise heat losses and gains, which reduces heat losses and therefore heating loads through colder months whilst also maintaining better levels of thermal comfort during the summer months, reducing cooling loads to occupied areas by providing cooling through passive measures where possible.

The heating and cooling strategy shall include new roof mounted external condensers, serving indoor heating and cooling units via a VRF/VRV system (Variable Refrigerant Flow/Variable Refrigerant Volume), which is an Air Source Heat Pump (ASHP) solution providing air-to-air heating, increasing efficiency of the systems beyond that of an air-to-water system.

The domestic hot water shall be provided via CO_2 ASHP system with external condensers mounted on the roof, with thermal storage located within an internal plantroom on the top floor level to minimise distribution, reducing system costs and maintaining high efficiencies.

Ventilation shall be provided via a mixture of natural ventilation with openable windows and automatically controlled mechanical ventilation with heat recovery. This hybrid system would allow each space to control its environment based on temperature and air quality, with ventilation unit ramping up and down to provide only the ventilation rates required to maintain suitable conditions for the occupants, allowing energy to be saved when room CO_2 concentration and temperatures are suitable. The Heat recovery device within the ventilation systems will reuse circa 80% the heat extracted from the space to preheat the incoming air, allowing the ventilation systems to provide supply air through winter months without significantly increasing the heat loads associated with cooler air entering the occupied area. The automatic controls of the unit will also cause unit to ramp down when natural ventilation is utilised as the sensors associated with MVHR controls will recognise the benefits provided by the incoming fresh air and reduce fan speeds and therefore energy usage.

Another benefit of a new build scenario is that the utility services can be applied for as new connections with little risk of utilising existing services and also allows for simple installation of all new sub-metering requirements to varying systems and areas of the building as required. Utility services associated with some of the options utilising existing buildings do cause implications, although implications that may be required in any case in some instances.

The main advantage of a new build element is the blank page at which the design team will have to begin on, essentially discounting any historical inefficiencies/limitations of the design based on services routes, capacities on existing services, plant space etc.

Photovoltaic array shall be provided to the flat roof area to incorporate renewable energy on site generation that can reduce the carbon emissions of the new building beyond the low carbon technologies proposed.

2.0 Site B

2.1 Site B – Option 01 – Light Refurb

The first proposed option for Site B is to provide a light refurb with little/no major changes to building layout architecturally, but to reprovide mechanical and electrical services to improve the energy efficiency of the building.

This solution would look to incorporate new technologies with greater efficiencies than that of the existing gas boiler installation currently serving the building. These technologies outlined below would utilise more electrical energy, which is now a cleaner fuel than that of gas or oil following the recent installations of solar and wind farms as part of the decarbonisation of the grid, whereby reducing the CO_2 emissions of the building significantly.

The heating and cooling strategy shall include external condensers with enclosure at ground floor level, serving an internal plantroom whereby thermal stores act as a header to provide an air-to-water system, utilising an LTHW circulating system, much like a traditional radiator system, providing hot water to radiator systems throughout the building. Utilising an air-to-water system does reduce efficiencies slightly due to heat losses associated with transporting the hot water around the building through distribution pipework and having additional pump power associated with circulating the water. The water temperatures provided by an ASHP air-to-water system as lower than a traditional gas boiler installation, therefore pipework and radiator sizes required to provide the same amount of heat to a space is increased, and as such new distribution systems would be required to facilitate this installation, however, this strategy has been proposed to try to maintain the traditional radiator installations currently within the building, with additional radiators to be added to the circuit to make up the for lower flow temperatures.

The domestic hot water shall be provided via CO_2 ASHP system with external condensers mounted externally, with thermal storage located within the internal plantroom on the ground floor, with some local point of use electric hot water heaters expected to more isolated outlets, where additional pipework distribution heat losses may be less efficient than a direct local system.

Ventilation shall be provided utilising the same strategy as existing, with majority of spaces being served via natural ventilation, with proposals including for replacement of any existing local/zonal mechanical ventilation systems, with greater efficiencies than the systems being stripped out. New Mechanical ventilation systems may be introduced if this is deemed of benefit, but this would need to be assessed on a room-by-room basis regarding the ceiling void space and possible routes to the external façade.

Utilising the existing site would provide a cost saving to the council as the building structure etc is already present and would when considering a life cycle carbon assessment, which at present are not a requirement, the reuse of existing building structures/fabric would minimise any embodied carbon associated with the build, with structures usually contributing a significant proportion of embodied carbon on any new build projects.

The existing roof shall be utilised to maximise the PV array installation to further reduce carbon emissions of the building in use by generating renewable technologies on site.

It should be noted that any works to incorporate these new technologies likely require upgraded incoming electrical services to facilitate the additional loads incurred from providing heating via electrical systems as opposed to existing gas solution.

2.2 Site B – Option 02 – Separate Buildings B&C

The second option proposed for Site B would be serviced as per Option 01 above but would require some consideration with relation to how the buildings integrate. The link between the two buildings must be severed completely, with full separating wall and this would require the buildings being provided with separate utility connections for billing purposes, with electrical incoming services required to each of buildings B&C.

The existing water metering strategy is unknown as incoming water meters were not located on site during the time of visit, though this is likely to have much less impact than that of the electrical works associated with splitting these buildings. It should be noted however, that upgrade works to incoming electrical services would likely be required in any case due to increased loads from electrical heating/hot water equipment proposed.

3.0 Site C

3.1 Site C – Option 01 – Light Refurb as existing

The first proposed option for Site C is to provide a light refurb with little/no major changes to building layout architecturally, but to reprovide mechanical and electrical services to improve the energy efficiency of the building.

This solution would look to incorporate new technologies with greater efficiencies than that of the existing gas boiler installation currently serving the building. These technologies outlined below would utilise more electrical energy, which is now a cleaner fuel than that of gas or oil following the recent installations of solar and wind farms as part of the decarbonisation of the grid, whereby reducing the CO_2 emissions of the building significantly.

The heating and cooling strategy shall include new external condensers in enclosure at ground floor level, serving internal VRF/VRV units directly providing an air-to-air system, whereby highest efficiency equipment can be selected to maximise the benefits of the new technology. The indoor units to ground floor spaces likely need to be wall mounted systems due to the limited ceiling void space, whilst cassettes or ducted units may be utilised at first floor where void is larger.

The domestic hot water shall be provided via CO_2 ASHP system with external condensers mounted externally, with thermal storage located within the internal plantroom on the ground floor, with some local point of use electric hot water heaters expected to more isolated outlets, where additional pipework distribution heat losses may be less efficient than a direct local system, noting the current layouts generally have all rooms requiring hot water services central to the building, making the existing layout inherently energy efficient with regards to hot water services.

Ventilation shall be provided to first floor areas via the use of new mechanical ventilation with heat recovery technology, to provide fresh air to first floor areas whilst minimising heat losses to the space associated with cooler incoming air. These systems shall be automatically controlled allowing natural ventilation to be utilised when it is of benefit to allow ventilation systems to reduce fan speeds and save energy when external conditions allow. Due to the ground floor ceiling void space limitations, it is proposed that ground floor areas would retain existing natural ventilation strategy, though should mechanical ventilation be an aspiration at ground floor level, the design team can look at options to provide ductwork through first floor areas in risers to provide air at high or low level through sidewall diffusers with ductwork boxed in – noting some usable floor space at first floor would be compromised in a small number of areas.

Utilising the existing site would provide a cost saving to the council as the building structure etc is already present and would when considering a life cycle carbon assessment, which at present are not a requirement, the reuse of existing building structures/fabric would minimise any embodied carbon associated with the build, with structures usually contributing a significant proportion of embodied carbon on any new build projects.

The existing roof shall be utilised to maximise the PV array installation to further reduce carbon emissions of the building in use by generating renewable technologies on site.

Any sub-metering requirements would need to be considered as part of this development with separate systems provided to each domain should lettable spaces require separate billing requirements. Options 01 to 03 proposed to split building to provide council offices at first floor and lettable areas (and front of house) at ground floor, noting this is the more simple approach from a sub-metering/separating plant systems point of view.

It should be noted that any works to incorporate these new technologies likely require upgraded incoming electrical services to facilitate the additional loads incurred from providing heating via electrical systems as opposed to existing gas solution.

3.2 Site C – Option 02 – Creation of New 'Front of House' area on Ground Floor

The second option proposed for Site C would be serviced as per Option 01 above but would require some consideration to how the front of house areas are serviced due to the limited void space at ground floor, with wall mounted units likely required to this reception space. However, the implications on the M&E services of this option is fairly limited.

3.3 Site C – Option 03 – Separate Buildings B&C

The second option proposed for Site C would be serviced as per Option 02 above but would require some consideration with relation to how the buildings integrate. The link between the two buildings must be severed completely, with full separating wall and this would require the buildings being provided with separate utility connections for billing purposes, with electrical incoming services required to each of buildings B&C.

The existing water metering strategy is unknown as incoming water meters were not located on site during the time of visit, though this is likely to have much less impact than that of the electrical works associated with splitting these buildings. It should be noted however, that upgrade works to incoming electrical services would likely be required in any case due to increased loads from electrical heating/hot water equipment proposed.

3.4 Site C – Option 04 – Separate Buildings B&C – Vertical Separation

The second option proposed for Site C would be serviced as per Option 03 above but the separation between the council used elements and the lettable spaces would be undertaken vertically, to split building C in half as opposed to the separation by floor included in options 01-03. Either of these solutions can be made to work through design of sub/metering and proposed plant systems depending on how the lettings agreement and billing is intended to work, though floor by floor split likely more suitable on the basis of ventilation strategy differing between the floors. This consideration is fairly minor and easily overcome as part of the developing M&E design.

4.0 Site D

4.1 Site D – Option 01 – Refurbishment of Existing for Sub-letting

The first proposed option for Site D is to provide a light refurb with little/no major changes to building layout architecturally, but to reprovide mechanical and electrical services to improve the energy efficiency of the building.

This solution would look to incorporate new technologies with greater efficiencies than that of the existing gas boiler installation currently serving the building. These technologies outlined below would utilise more electrical energy, which is now a cleaner fuel than that of gas or oil following the recent installations of solar and wind farms as part of the decarbonisation of the grid, whereby reducing the CO_2 emissions of the building significantly.

The heating and cooling strategy shall include new external condensers in enclosure at ground floor level, serving internal VRF/VRV units directly providing an air-to-air system, whereby highest efficiency equipment can be selected to maximise the benefits of the new technology.

The domestic hot water shall be provided via domestic ducted ASHP system (Dimplex EDL or similar), with cylinder to be located in existing ground floor plantroom and ducted to building façade locally, with hot water distribution to be provided from the cylinder to local WC's in the corner of the building. Should any additional hot water outlets be required elsewhere in the building, local point of use hot water heaters may be provided where more suitable than an extension of distribution pipework.

Ventilation shall be provided throughout via local or central mechanical ventilation with heat recovery, dependent on plantroom space and capacity required of the ventilation systems. Heat recovery systems will reduce heat loads associated with introducing fresh external air to the space and smart controls will allow automatic controls to minimise energy usage in conjunction with natural ventilation strategy via openable windows, to ensure the two systems work parallel with one another. Ventilation unit shall sit within the first floor plantroom, which currently houses small supply AHU and extract fan, though these systems appear undersized to serve all office areas and therefore sizes would need to be assessed as any further design. Local heat recovery units ducted to the façade would also be an option as required to overcome plant space and any possible coordination issues associated with the existing building.

Utilising the existing site would provide a cost saving to the council as the building structure etc is already present and would when considering a life cycle carbon assessment, which at present are not a requirement, the reuse of existing building structures/fabric would minimise any embodied carbon associated with the build, with structures usually contributing a significant proportion of embodied carbon on any new build projects.

The existing roof shall be utilised to maximise the PV array installation to further reduce carbon emissions of the building in use by generating renewable technologies on site.

It should be noted that any works to incorporate these new technologies likely require upgraded incoming electrical services to facilitate the additional loads incurred from providing heating via electrical systems as opposed to existing gas solution.

4.2 Site D – Option 02 – Refurb Existing and Build New Extension

The second option proposed for Site D would be as per Option 01 with regard to existing services, though the proposed new extension would provide a roof top location for ASHP plant equipment (removing the need to ground floor external enclosure) and additional PV array.

The proposed new build element could be designed with a fabric first approach to enhance the thermal envelope beyond current building regulations to reduce heat loads of the new areas, minimising the loads associated with heating and cooling.

The new build extension would be designed with the same services strategy as the proposed upgrades the existing areas, but building design itself can make allowances to overcome issues outlined above with relation to coordination against existing structures and size constraints of existing spaces.

4.3 Site D – Option 03 – Demolition and New Build Block

The final option for Site D would be to completely demolish the existing block to create space on site to provide a new building for the new offices for Charnwood Borough Council. This solution provides autonomy of the design to target carbon reductions in line with new building regulations, through the thermal envelope including fabric efficiencies and building details with relation to thermal bridging. A new build design would provide significant benefits when targeting a carbon neutral outcome to the buildings, due to the inherently efficient design that could be undertaken, minimising building services loads.

The services strategy would again be as per Option 01 for Site D, with air-to-air VRF/VRV installations, ASHP domestic hot water and mechanical ventilation with heat recovery, which can all be designed in line with other design team members to maximise efficiencies of the systems through M&E input into the building form/layout.

The new build scenario would also allow new utility connection to applied for, simplifying any proposed works to avoid any upgrades/diversions to existing services.

However as mentioned previously in this report, any new build proposals would incur significant uplifts in embodied carbon due to the structural installation often contributing significantly to the whole life carbon assessments (as to photovoltaic arrays). Therefore the new build elements are most likely to achieve carbon neutral in operation but would have more implications on a whole life carbon assessment.

It has been noted that the new build design of this building may be reviewed to provide a four storey building as opposed to the two storey option currently proposed, which does alter the possible outcomes of any PV array, as less roof space would be available on a four storey building were the GIFA to remain the same, essentially halving the PV yields annually. Please note that the PV assessments undertaken is based on the current two storey option.

5.0 Site E&F

5.1 Site E&F

The proposed option for Site E&F is partly demolish the existing building and build a new block associated with the town hall Victoria rooms suite.

This solution would look to incorporate new technologies with high efficiencies within the new build elements and replace systems within certain rooms within the retained building areas.

The heating and cooling strategy shall include new external condensers in enclosure at roof level on the new building, serving internal VRF/VRV units directly providing an air-to-air system, whereby highest efficiency equipment can be selected to maximise the benefits of the new technology.

The domestic hot water shall be provided via CO^2 ASHP system with thermal store to be located in new plantroom where hot water shall be circulated throughout to outlets. Should any additional hot water outlets be required elsewhere in the building, local point of use hot water heaters may be provided where more suitable than an extension of distribution pipework.

Ventilation shall be provided throughout new build elements via local or central mechanical ventilation with heat recovery. Heat recovery systems will reduce heat loads associated with introducing fresh external air to the space and smart controls will allow automatic controls to minimise energy usage in conjunction with natural ventilation strategy via openable windows, to ensure the two systems work parallel with one another. The existing ventilation systems shall be replaced in situ to retain existing strategies but provide systems with higher efficiencies to replace those at the end of life.

The new build roof shall be utilised to maximise the PV array installation to further reduce carbon emissions of the building in use by generating renewable technologies on site.

It should be noted that any works to incorporate these new technologies likely require upgraded incoming electrical services to facilitate the additional loads incurred from providing heating via electrical systems as opposed to existing gas solution, with consideration of upgrades required by combining the two buildings which are not currently linked, therefore requiring single incoming electrical connection.

6.0 Site G

6.1 Site G

The proposed option for Site G reutilise the existing Town Hall building and combine with existing HSBC building next door to create a central “hub” for Charnwood Borough Council.

This solution would look to incorporate new technologies with high efficiencies within the existing buildings to create a site wide central plantroom serving all areas.

The heating and cooling strategy shall include new external condensers in enclosure at existing roof level on the new building, serving internal VRF/VRV units directly providing an air-to-air system, whereby highest efficiency equipment can be selected to maximise the benefits of the new technology,

The domestic hot water shall be provided via CO^2 ASHP system located on existing roof with thermal store to be located in existing plantroom where hot water shall be circulated throughout to outlets. Should any additional hot water outlets be required elsewhere in the building, local point of use hot water heaters may be provided where more suitable than an extension of distribution pipework.

Ventilation shall be provided throughout new build elements via local or central mechanical ventilation with heat recovery. Heat recovery systems will reduce heat loads associated with introducing fresh external air to the space and smart controls will allow automatic controls to minimise energy usage in conjunction with natural ventilation strategy via openable windows, to ensure the two systems work parallel with one another. The existing ventilation systems shall be replaced in situ to retain existing strategies but provide systems with higher efficiencies to replace those at the end of life.

Full intrusive site survey would be required to confirm condition of certain services and what would be available for reuse in areas where M&E services are concealed/inaccessible, though from visual inspection undertaken, majority of M&E services within the building are nearing the end of life expectancy and as such are due for replacement.

Existing chiller has recently been replaced which currently serves performance hall and therefore would be suitable for replacement, whilst existing BMS which has likely been replaced by maintenance staff would likely require replacemenet or extension in order to meet the required capacity of the systems when combining the two buildings.

The existing roof shall be utilised to maximise the PV array installation to further reduce carbon emissions of the building in use by generating renewable technologies on site.

It should be noted that any works to incorporate these new technologies likely require upgraded incoming electrical services to facilitate the additional loads incurred from providing heating via electrical systems as opposed to existing gas solution, with consideration of upgrades required by combining the two buildings which are not currently linked, therefore requiring single incoming electrical connection.

7.0 Benefits of new technology

7.1 Gas vs ASHP vs GSHP

An outline assessment of the existing buildings has been undertaken to give an estimate of the possible savings associated with providing Air Source and Ground Source heat pumps to the existing solutions, to assess the capital costs, annual energy and carbon savings and the savings relating to the running costs – note, these are only relating to heating loads, hot water and other associated loads have not been considered below. The Site D consideration cover only the existing building refurbishment.

As can be seen on the assessment below, whilst the efficiencies of ASHPs and GSHPs is largely increased, and the carbon reductions over gas solution is considerable, the costs per kWh of gas vs electricity is much lower, therefore operating costs associated with the upgrades to this new technology do not necessarily decrease in line with the increase of the efficiencies.

Charwood Council Offices Options
Heat Pump Calculations

Allowances	W/m2 Heating Allowance	Total GIFA (m2)	kW Heating	Cost of Heat Pump Plant (£)	Length of Boreholes Required (m)	Cost of Boreholes (£)
Site B	70	2003	140.21	140210	2804.2	140210
Site C	70	2394	167.58	167580	3351.6	167580
Site D Existing	70	686	48.02	48020	960.4	48020
Site D New Build	60	1700	102	102000	2040	102000
Site D Total			150.02	150020	3000.4	150020

Capital Costs	Cost of ASHP	Cost of GSHP	Cost of Gas Boilers
Site B	£ 140,210	£ 280,420	£ 21,032
Site C	£ 167,580	£ 335,160	£ 25,137
Site D Existing	£ 48,020	£ 96,040	£ 22,503

	ASHP	GSHP	Gas
Assumed Efficiencies	270%	320%	95%

Gas Costs per kWh	£	0.08
Electrical Costs per kWh	£	0.34

Gas Carbon Emission Factor	0.21	kgCO2/kW
Electric Carbon Emission Factor	0.136	kgCO2/kW

Gas Loads	Annual Heating Load (kWh)	Boiler Annual Gas Input (kWh)	Annual Running Costs	Annual Carbon Emissions (kgCO2/yr)
Site B	196294	206625	£ 16,530.02	43391
Site C	234612	246960	£ 19,756.80	51862
Site D Existing	67228	70766	£ 5,661.31	14861

ASHP Loads	Annual Heating Load (kWh)	ASHP Annual Electrical Input (kWh)	Annual Running Costs	Annual Carbon Emissions (kgCO2/yr)
Site B	196294	72701	£ 24,718.50	9887
Site C	234612	86893	£ 29,543.73	11817
Site D Existing	67228	24899	£ 8,465.75	3386

GSHP Loads	Annual Heating Load (kWh)	GSHP Annual Electrical Input (kWh)	Annual Running Costs	Annual Carbon Emissions (kgCO2/yr)
Site B	196294	61342	£ 20,856.24	8342
Site C	234612	73316	£ 24,927.53	9971
Site D Existing	67228	21009	£ 7,142.98	2857

Site B		
Cost Saving of GSHP over ASHP/year	£	3,862.27
Capital Cost Uplift from ASHP to GSHP	£	140,210
Payback Period (years)		36.3
Site C		
Cost Saving of GSHP over ASHP/year	£	4,616.21
Capital Cost Uplift from ASHP to GSHP	£	167,580
Payback Period (years)		36.3
Site D		
Cost Saving of GSHP over ASHP/year	£	1,322.77
Capital Cost Uplift from ASHP to GSHP	£	48,020
Payback Period (years)		36.3

7.2 Photovoltaics (PVs)

An outline assessment of the existing buildings has been undertaken to give an estimate of the possible savings associated with providing photovoltaic arrays to each of the buildings to assess the potential savings based on available roof space compared to GIFA of each building.

The assessment below also shows the option of providing PV covered canopies to the existing car park to make use of the available space and maximise on site generation of renewable energy.

Charwood Council Offices Options
PV Calculations

Assumed PV Yield per m2 PV - (425W Panels)	170	kWh/m2 of PV

Block	GIFA (m2)	Roof Area (m2)	Usable Roof Area for PV's (m2)	Flat Roof or Pitched Roof	Possible Yield Based on Maximum PV Array (kWh)	Benefit of PV vs GIFA Assessment Score (1-10)
Site A	2462	846	507	Flat	43095	6
Site B	2003	1167	583	Pitched	79288	8
Site C	4524	2226	1113	Pitched	151368	8
Site D Option 01 - Refurb	686	342	171	Pitched	23256	8
Site D Option 02 - Refurb & Extension	2386	1193	433	Pitched & Flat	45526	6
Site D Option 03 - New Build	2400	1200	350	Flat	29750	4
Site E&F - Part Retained with New build element	2137	1182	497	Flat	42245	6
Site G	1822	546	236	Flat	20060	4
Car Park Canopies		2596	1558	Flat	132430	10

7.3 Energy Benchmarking – Savings

The results below have been calculated using energy benchmarking figures in CIBSE guide F, utilising figures between good practice and typical to allow for building age and expected fabric efficiencies.

The Results outlined below are very high level and are intended to give an idea of the expected reductions associated with the new technology proposed. Fabric enhancements are being considered and where these are applicable to buildings, these will provide further benefit to the upgrades outlined below.

Charwood Council Offices Options
Energy Benchmarking Estimates

Assumed Energy Loads based on CIBSE Guide F - Energy Benchmarking (Between Good Practice and Typical mid 2000s)

Naturally Ventilated Offices	
System	Load (kWh/m2/yr)
Heating & Hot Water	115
Cooling	1
Auxillary	6
Lighting	30
Total Elec	37

Air Conditioned Offices	
System	Load (kWh/m2/yr)
Heating & Hot Water	140
Cooling	21
Auxillary	45
Lighting	30
Total Elec	96

Option	GIFA (m2)	Total Estimated Electrical Load (kWh/yr)	Total Estimated Gas Load (kWh/yr)	Total Estimated Reduction from ASHP Upgrades (kWh/yr)	Total Estimated Reduction from PV (kWh/yr)	Estimated Energy Usage with ASHP and PV (kWh/yr)	% Reduction against Existing
Site B - Option 01	2003	74,111	230,345	133,924	79,288	91,244	70.03%
Site B - Option 02	2003	74,111	230,345	133,924	79,288	91,244	70.03%
Site C - Option 01	4524	300,846	520,260	160,067	151,368	509,671	37.93%
Site C - Option 02	4524	300,846	520,260	160,067	151,368	509,671	37.93%
Site C - Option 03	4524	300,846	520,260	160,067	151,368	509,671	37.93%
Site C - Option 04	4524	300,846	520,260	160,067	151,368	509,671	37.93%
Site D - Option 01	686	25,382	78,890	45,867	23,256	35,149	66.29%

chord consult

Engineering harmony

Loughborough Town Hall & HSBC Building

Mechanical, Electrical and Sustainable Building Services Feasibility and Condition Report

Chord Ref: 23020

chordconsult.co.uk

NOTTINGHAM | MILTON KEYNES

1.0	**Introduction**	**3**
1.1	General	3
1.2	Executive summary	3
1.3	Possible efficiencies / betterment summary	4
2.0	**Utilities**	**5**
2.1	Water	5
2.2	Gas	5
2.3	LV Electrical Service	5
2.4	Telecommunications Services	5
3.0	**Existing Services**	**6**
3.1	General Items	6
3.1.1	Energy metering	6
3.2	Mechanical Services	6
3.2.1	Heating & Cooling	6
3.2.2	Ventilation	6
3.2.3	Domestic Water	6
3.2.4	Controls	6
3.3	Electrical Services	6
3.3.1	Energy Metering	6
3.3.2	Based on the installation	6
3.3.3	Combining two buildings	6
3.3.4	Photovoltaics	6
3.3.5	Lightning Protection	6
4.0	**Proposal for New Scheme**	**7**
4.1	Outline Strategy	7
4.1.1	Grid Decarbonisation	7
4.1.2	Heating Systems	7
4.1.3	Domestic Hot Water Systems	7
4.2	Expected plant / equipment life	8
4.3	Site Photos of existing M&E plant / equipment	10
5.0	**Vertical Transportation Installations**	**14**
5.1	Goods Lifts	14

1.0 Introduction

1.1 General

The following report has been produced by Chord Consult to give an overview of the condition of the existing mechanical and electrical building services for the Loughborough Town hall and its viability to be combined with the adjacent HSBC site to create new council office facilities by combining the buildings. This report is intended to inform the next stage of the discussion process regarding the options available to provide new council offices within the town.

The existing site is located in the town centre on Market Place, Loughborough, LE11 3EB.

The town hall facilities are generally used for performances within main hall/auditorium space, whilst also has a number of conference spaces and wedding facilities for hire. Ancillary spaces are included throughout for guests, some of which are adjacent to changing areas and double up as backstage facilities for performers.

The existing facility comprises of;

- Basement, including mostly storage/cellar
- Ground floor, including reception area, main performance hall, kitchen and staff kitchenette facilities, changing areas for performers, lettable conference spaces (including council chamber), mayoral parlour and other ancillary spaces such as staff admin areas, storage and WC's.
- Mezzanine Floor, including café/breakout space, WC's to top of performance bleacher seating and access to flat roof for flat roof.
- First floor, including Victoria rooms (wedding/conference facilities with bar and dumbwaiter for deliveries from kitchen) along with access to Victoria room loft space for plant equipment.
- Plantroom within loft space accessible via ladder with additional access to roof space.

Figure 1 – Site Location

The facility was opened in 1855 and had its most recent refurbishments took place between 2002 to 2004.

1.2 Executive summary

The majority of the services are aged and beyond their general life expectancy. In a lot of cases the maintenance team are working to keep aged plant / equipment running with maintenance call outs on certain equipment becoming increasingly regular, whilst some elements of equipment have been more recently replaced.

In a lot of cases the services component parts are nearing or at end of life expectancy but are being maintained to remain running for the most part, with individual component replacement taking place on multiple elements of plant/distribution.

There are some elements of plant that would be suitable for retention and are more recently installed, including a number of Mitsubishi cooling installations, whilst the Carrier chiller installation serving performance hall and nearby BMS are due for replacement and therefore would be suitable for retention as part of any works.

The efficiencies of the existing M&E services is likely poor compared with current building regulations and technologies available based on technological advances since installation, as well as degradation of the equipment itself.

It is evident that some of the exposed services such as pipework/valves and electrical services containment systems have started to corrode in places and therefore likely to start failing.

With regards to energy efficiency, with a target to improving the carbon emissions of the existing building, there are a number of services that could be replaced with newer technologies, such as Air Source Heat Pumps (ASHP) to provide heating and hot water services, that provides an efficiency of 3-4 times that of a the existing boiler system, as well as using electricity as the fuel which has a lower carbon emission factor than that of gas due to the recent decarbonisation of the grid. An array of ASHP condensers on the roof could replace the existing boilers, with an internal thermal store and pump sets to provide low temperature how water to the heating system, which could allow some additional storage space within the plantroom where boilers are no longer required. Domestic hot water systems would be provided via hot water storage fed by ASHP LTHW with immersion back up to provide a lower carbon solution to both of these energy uses, noting this strategy would require a review of the existing electrical capacity to the building, as large heating and domestic hot water loads being added to the electrical utility services may require upgrade to increase electrical capacities.

Another fairly simple improvement to lower carbon emissions and energy usage would be to install latest LED lighting technology throughout, which would like achieve a 25-50% improvement on energy usage against existing lighting usage dependent on existing fitting outputs/efficiency.

1.3 Possible efficiencies / betterment summary

The below table is an indication of the likely betterment in efficiency, if the existing services where completly replaced by either a complete refurbishment or a replacement new build. This is based on compliance with current building regulations, which could be bettered if the end client has aspiration's of further carbon reductions.

Item	Current building predicted	Current build regs / general prediction	Note
BEM System	End of life expectancy but in working condition generally, however, replacement BEMS panel has been ordered directly by maintenance team therefore shall be replaced prior to any works take place.	Allow automatic control of systems maximise energy efficiency.	This should be undertaken prior to any contract works and therefore should be suitable for retention provided panel capacity/number of ways is sufficient.
Energy Metering	Single incoming meter for each utility with some additional metering at distribution boards.	90% of end use energy, reporting to a collection facility.	Allows full understanding of actual energy use and flags 'out of range' figures indicating faulty equipment wasting energy.
Water Management	As per required usage	Leak detection software and flow restriction	This would allow fault monitoring on elements of water pipework to alert staff to a leak and minimise wastage by reducing flow rates whilst maintaining water pressures at outlets.
General internal lighting and associated controls.	50 lm/ct/w with manual switching generally	95 lm /ct /w with automatic controls via presence/absence detection and daylight dimming where suitable.	50 -60% improvement predicted.
Heating/Cooling	Gas boilers providing LTHW heating via radiators throughout, with a few rooms fed alternatively via LTHW convection via grilles below windows, some smaller areas fed from electric panel heaters and some dealt with via Mitsubishi ducted heating and cooling units. Chiller currently provided and due to be replaced to main hall systems to provide cooling via supply air system.	New highly efficient ASHP technology would reduce carbon emissions and provide heating to the building with an efficiency of 3-4 times that of existing gas heating system. ASHP scheme would also use electricity, which is now a cleaner fuel than gas due to the decarbonisation of the national grid, therefore further reducing carbon emissions.	This would improve energy efficiency significantly in order to provide heating to the building. This would require free area of roof available for the external condenser ASHP installation whilst reutilising plantroom for internal elements of wet heating installation. May free up some space in plantroom in for storage of seasonal decorations etc as discussed with end user. Emitter sizes would be increased over the size of current installations due to lower flow temperatures associated with an ASHP system.
Ventilation Systems	Large AHU01 to performance hall with heating/cooling coils to temper incoming air. Large AHU02 to function rooms (excluding Victoria Rooms) with heating/cooling coils to temper incoming air. AHU03 providing extract ventilation to commercial kitchen.	New AHU's with higher heat recovery efficiency than existing shall reduce heating/cooling loads from chiller and ultimately increase efficiencies. New kitchen ventilation installation with lower SFP's to reduce energy and suit new kitchen design with the intention to go to electrical induction cooking equipment.	New technology would allow AHUs to be installed with more efficient heat recovery devices that reduce heat loads to the spaces significantly as upwards of 80% of the heat extracted from space can be reintroduced to avoid wasted heat. Along with this, lower specific fan powers reduce energy loads due to less power being required to power the fan, which can also be controlled on demand to allow fan speeds to run lower, further reducing power requirements.

2.0 Utilities

The existing buildings currently have dedicated / separate incoming infrastructure supplies for:-

- Incoming water service
- Incoming electric service
- Incoming gas services
- Incoming telecommunications service

2.1 Water

The existing mains cold water services bill have not been provided, however, there is a number of ways that water usage may be reduced through a new installation, some of which are highlighted in the table in section 1 of this report.

Possible upgrades which could aid water management/usage are:

- Leak detection system – monitoring incoming main at multiple meter points to flag any inconsistency.
- Flow restriction devices at outlets (showers and taps).
- Rainwater Harvesting - utilising rainwater for any non-potable water services (WCs).

These would improve water management systems but would include capital expense for initial install and some would require maintenance works (likely annually).

2.2 Gas

The existing incoming gas bill has not been provided but the expectation would be to remove the requirement for gas by replacing gas boilers with electric ASHP system and removing gas from kitchen installation to introduce induction cooking equipment.

2.3 LV Electrical Service

The buildings are currently serviced from two separate dedicated low voltage service connection from the local District Network Operator (DNO) provided by National Grid Electrical Distribution (NGED).

The DNO regulations will only allow a single connection to any building. Once a door/opening is made between buildings (as proposed), these is then classed as a single building and only one supply will be provided.

Due to the above and the aspiration to remove the gas (resulting in an all-electric building) the anticipated scope will include removal / disconnection of both building existing supplies and provision of a new (increased) supply to provide the electric to the entire scheme.

At this preliminary stage the capacities have not been assessed and the local low Voltage network would need assessing by the local DNO. For any preliminary cost plans / proposals it would be sensible to assume the requirement for a new substation until the DNO have provided an offer.

2.4 Telecommunications Services

The incoming telecommunication would require engagement with openreach (or the current provider), however appears to be an incoming copper line. Copper telecommunication supply cables where stopped being sold in Aug 2022, from Sept 2023 only digital (fibre) installations will be offered, with a view of ‘switching off copper’ in the future.

At some point in the future (currently reported as by the end of 2025) the UK's analogue network (the PSTN, Public Switched Telephone Network) will be switched off.

As part of the scheme a new fibre (FTTP) should be provided.

3.0 Existing Services

3.1 General Items

Chord Consult undertook a high-level survey of the M&E surveys to establish the feasibility of the proposed extension / remodelling options. The below observations are based on said survey and discussion with the Town Halls maintenance personnel.

Key equipment locations and general notes are included on the drawing at the end of this section.

3.1.1 Energy metering

Existing energy metering Is very limited, with only the incoming services having meters fitted, with exception of what is expected at distribution boards to split out lighting and power as is usual. This is not compliant with current Approved Document part L and gives little opportunity for the end user to understand where the energy is consumed within the building. A new BMS panel has been ordered for within the Ventilation plantroom and as such a collection facility should be achievable under any new installation to report meter readings of 90% of the services systems back to central point.

3.2 Mechanical Services

3.2.1 Heating & Cooling

The heating systems are generally fed directly from the gas boiler plant in first floor loft space except for a small number of higher intensity activity spaces such as the performance hall, Victoria rooms and some larger conference spaces.

The space heating is mostly provided steel panel radiators via LTHW (Low Temperature Hot Water) heating distribution throughout the building.

However, as previously mentioned, a number of areas are served vi other forms of heating/cooling including the Victoria rooms, where ducted ventilation units within the loft directly above are served by Mitsubishi heating and cooling ducted units via ASHP installation to supply fans that directly serve the larger conference space and adjacent associated bar.

The performance hall is served via a large AHU located on the mezzanine level flat roof, with an LTHW heating coil from gas boilers as well as cooling coil directly from the adjacent chiller unit due for replacement prior to any works taking place. This allows heating and cooling to be provided to the space directly via sidewall grilles to each side of the performance space, with most air introduced beneath bleacher seating.

Other function rooms, such as the council chambers and mayoral suite are fed via a separate AHU that also includes the same connections with LTHW heating coil and cooling via the same chiller which are fed by column grilles within the council chambers and high level grilles within the mayoral suite.

The temperatures of these spaces at tie of visit were fairly well regulated, though were unoccupied at time of visit, but the onsite team advised that these systems are generally satisfactory whilst chiller is being replaced due to life cycle coming to an end.

All pipework distribution and valves within the plant areas are beginning to show signs of aging/corrosion, indicating these are beyond serviceable life expectancy and significantly increasing energy usage. With the age of the pipework and amount of corrosion likely in the pipes, the loads on the pump sets to meet required pressures may well be higher than those in the original design, reducing efficiency of the system.

3.2.2 Ventilation

The majority of existing ventilation plant sits within a ventilation plantroom at mezzanine level and adjacent flat roof housing multiple AHUs serving various areas of the building.

The existing Air Handling Unit (AHU01) system within the plantroom is aged and likely past its life expectancy, noting however that this appears to have been maintained well over the years as still in serviceable order. However, the maintenance staff on site advised that component replacement and maintenance call outs are becoming more regular in order to keep the ventilation to the performance hall running.

The existing Air Handling Unit (AHU02) system on the flat roof adjacent to mezzanine plantroom is aged and has been exposed to the elements its whole serviceable life and is showing signs of corrosion/aging in localised areas. This unit was running at time of visit but similar to AHU01, has had regular maintenance visits to repair multiple components and will likely need replacement or at a minimum significant component replacement.

The other roof mounted ventilation system (AHU03) serves the kitchen with extract ventilation via extract canopies and supply ventilation to high level grilles. This system, like the others was installed at time of latest refurbishment over 20 years ago and requires significant component replacement or new AHU to refeed the same – noting kitchen locations likely to be reviewed at time of remodelling to be nearer to the Victoria rooms where majority of catering requirements are required, therefore a new location for kitchen ventilation systems may be required pending reconfiguration design of the building.

3.2.3 Domestic Water

The existing domestic water strategy appears to be that incoming mains cold water serves all cold water outlets including sinks, basins, WC's and showers as well as any top up to plant.

The domestic hot water services are fed generally throughout via point of use electric hot water heaters local to each shower and wash hand basin within each WC/cubicle.

Unfortunately, at the time of visit the plantroom was not accessible and therefore it is unclear if there is a hot water storage cylinder within serving the kitchen/any other outlets – however, any new scheme would look to create a central hot water system with thermal store, fed from ASHPs, therefore a new central system would be expected.

The existing domestic services to shower cubicles within the changing/dressing room areas, the domestic hot water is not in working order and shower facilities are out of order. In this vein, domestic hot water systems are in need of replacement in a number of areas and therefore a new central system would increase energy efficiency through new technology and creating a site wide system.

3.2.4 Controls

The existing control panel is completely aged and nearing replacement, with the new BMS panel and works on order via the current maintenance team which shall offer automatic control to the majority of the building services systems. Therefore, it is considered the BMS panel would be suitable for retention in any redesign, however, panel ordered would require sufficient capacity so may be that a new additional BMS panel may be required and connected to existing with one acting as a repeater panel for fault detection to the other.

All services with fluctuating loads, such as LTHW commissioning valves, will likely be nearing their end of life and therefore require replacement. Any redesign would cover off commissioning of new system with automatic controls and therefore increase efficiency due to newer technology and a more finely balanced system due to same.

3.3 Electrical Services

3.3.1 Energy Metering

There is very limited energy metering that is apparent in the building. Incoming supplies have aged meters and there is no collection facility.

3.3.2 Based on the installation

Based on the building construction age and a high level site survey the electrical installation is well past its life expectancy and consideration should be made to completely replace all electrical services.

3.3.3 Combining two buildings

Common systems referred to within this section of the report are; Utility services, fire alarms, access control, intruder alarm, CCTV.

Looking at the current electrical systems, they are aged and generally different systems (manufacturers), as the two buildings are proposed to be combined into one, the systems need to be combined into one common system. If there was a fairly modern system in one of the buildings and a complete refurbishment was not proposed, there could be an opportunity to retain/reuse the main components (such as main panels etc), but given the proposals and age of the existing systems Chords recommendation is to completely remove the systems detailed and provide new complete systems covering the entire proposed single building.

3.3.4 Photovoltaics

No existing PV is provided to the building.

3.3.5 Lightning Protection

There appeared to be a lightning protection system to the external of the building, however there was no evidence of any surge protection equipment.

4.0 Proposal for New Scheme

4.1 Outline Strategy

The purpose of Chord consult site visit to the Town hall was to review services conditions as well as reviewing the feasibility of combining the existing town hall with adjacent HSBC building that has recently been reconstructed following fire damage.

This section shall outline likely strategies to not only allow these buildings to be utilised as single entity, but also improve the carbon and energy efficiency against the existing services.

4.1.1 Grid Decarbonisation

The latest edition of Part L (Conservation of Fuel and Power) of the Building Regulations, 2021 version, was implemented in June 2022 for all new buildings outside of the transition criteria, as set out within the Approved Document. The new edition of Part L saw significant changes to carbon emission factors compared with the previous 2013 version, most notably, for electrical fuel. It is now accepted that due to the incorporation of alternative electrical generation, as opposed to fossil fuel power stations, the carbon intensity associated with producing electricity has significantly reduced. The table below shows a comparison of carbon emission factors, of various fuels, between the previous (2013) Part L Regulations and the current (2021) Regulations.

Fuel	Part L 2013 Carbon Emissions Factor	Part L 2021 Carbon Emissions Factor	% Reduction
Natural Gas	0.216	0.21	2.7
Grid Supplied Electricity	0.519	**0.138 (year average)**	**73**
LPG	0.241	0.241	0
Wood Pellets	0.039	0.053	-34
Wood Chips	0.016	0.023	-43

The table above shows the changes made to some of the fuel carbon emissions factors incorporated into Part L 2021. The list is not exhaustive and further information should be sought from the approved SAP 10.2 document. It does demonstrate, however, as a result of the changes it is now far more attractive from a carbon emissions perspective to consider electrically driven solutions for heating and hot water generation. Furthermore, the carbon emissions associated with the electrical grid are forecasted to reduce further in the future which would then reduce the operational carbon emissions for buildings and predicted emissions for future developments.

4.1.2 Heating Systems

The proposal for any new scheme combining existing buildings would incorporate an Air Source Heat Pump (ASHP) system with external condensers on vacant roof space adjacent to existing loft space plantroom routing to thermal store in internal plantroom forming the primary plant system, with relevant plant equipment internally such as expansion vessels, pressurisation units, pump sets etc. all within existing plantroom in lieu of gas boilers.

This new technology would utilise refrigerant gasses with low boiling points to create heat from external air which is then used to heat water that is circulated around the building similarly to a traditional gas boiler system, via distribution pipework to heat emitters such as radiators and heating coils where incoming air on ventilation systems is preheated to warm the occupied spaces. It should be noted that these emitters would likely increase in size over a traditional gas installation due to low flow temperatures.

This would likely reduce the energy usage associated with heating by 3-4 times against the existing gas heating systems due to increase in efficiency of the plant equipment where boilers would be expected to have an efficiency between 85-95% where ASHP systems often achieve efficiencies of 300-400%.

It should be noted that this may not reduce ongoing associated utility bills due to the change of fuel to electricity, which is usually approximately 4-5 times more expensive per kW than gas utility services. However, due to the decarbonisation of the national grid outlined above, electricity is a much cleaner fuel than gas, meaning the carbon reduction associated with this upgrade would be greater than the overall energy savings, i.e. while the energy saving would be expected at 65-75% in terms of the kW input required to heat the building, the carbon savings would exceed this, providing approximately 80-85% saving against existing carbon emissions associated with the gas heating system when allowing for carbon emission factors and higher efficiencies.

4.1.3 Domestic Hot Water Systems

The proposal for any new scheme combining existing buildings would, much like the heating systems, incorporate an Air Source Heat Pump (ASHP) system with external condensers on vacant roof space adjacent to existing loft space plantroom routing to internal plant elements within existing plantroom to charge a potable domestic hot water storage vessel to be distributed throughout the building.

This new technology would utilise refrigerant gasses with low boiling points to create heat from external air which is then used to heat water that is circulated around the building via distribution pipework to all hot water outlets such as sinks, wash hand basins and showers as required.

This system could be made more efficient by using smaller systems at various areas of the buildings to essentially zone these services, avoiding longer pipework lengths to minimise heat losses from the distribution of the hot water.

This would likely reduce the energy usage associated with hot water by 2-3 times against the existing direct electric hot water systems due to increase in efficiency of the plant equipment where existing hot water heaters (some of which are currently redundant) would be expected to have an efficiency of 100% where ASHP hot water systems often achieve efficiencies of 250-300%.

4.2 Expected plant / equipment life

This section has been included to provide an indication of the general state of the existing services as a high-level indication only. Dates of existing services are estimates only.

The table below is based on life expectances provided in CIBSE guidance M.

KEY TO CONDITION CODE	KEY TO PRIORITY CODE
A - The element is as new and can be expected to perform adequately to its full normal life. B - The element is sound, operating safely and exhibits only minor deterioration. C - The element is operational but major repair or replacement will be needed soon. D - The element runs a serious risk of imminent breakdown. X - Added to one of the above, indicates impossible to improve without replacement.	1 - Highly recommended to be carried out immediately 2 - Works recommended to be carried out within the next year (short term) 3 - Recommended and should be considered in next 3 years (medium term). . 4 - Recommended and should be considered in next 5 years (long term)

Service	Location of service	Comment/ recommendation	Condition (Code A-D)	Priority Code	Life Expectance	Remaining Life Expectancy
Electrical Incoming Supply		Low voltage connection from the DNO	CX		30	-20
Electrical switchgear / main distribution.		Mix of ages, but all past life expectancy.	DX		20	-10 / -30
Energy metering		Very sparse. Only on incomers.	CX		20	0
General internal lighting.		Working, aged and therefore inefficient. Replacement components becoming obsolete.	BX		20	0
General small power.		Power appears to be reasonable, but fed from old infrastructure. Replacement components becoming obsolete.	BX		25	0
Photovoltaics	Roof	Not applicable			-	-
Data / communications wiring	Throughout	Appear aged, but operational			20	0
LTHW Heating Systems	Throughout	In working order but at end of life and likely reduced efficiencies due to age of plant equipment and distribution pipework. Plantroom was not accessible at time of visit but assumed installation from 2002/2004 therefore at end of life expectancy.	CX			0
Heating/Cooling Heat Pump Systems	Victoria Rooms	In working order and well maintained – installations appear fairly recent with some life left on the systems, but part way through its life expectancy. Ducted units from above accessible and maintainable.	B		15	5-10
Heating/Cooling Chillers Systems	Performance Hall/Conference Rooms	Due for replacement and on order therefore assumed new installation shall be new and sufficient at time of contract start in any case.	A		15	15
Ventilation Systems	Ventilation Plantroom/ Roof	Systems within plantroom and flat roof area in working order currently but maintenance call outs to maintain/replace components becoming more regular.	C/DX		15	0
Ventilation Systems	Victoria Rooms	Systems within loft space above Victoria rooms appear to be working as a combined ducted system with heating and cooling, which appears to be more recently installed than original AHUs serving other areas though actual installation date unknown.	C		15	5-10
Domestic Hot Water Systems	Throughout	Existing local point of use electric hot water heaters are redundant to a number of locations, including dressing room showers etc whereby giving the indication that all systems are at the end of life and likely require replacement.	DX		20	0
Controls	Mezzanine Plantroom	Control panel is currently in working order but is due for replacement and on order – therefore for the sake of these works, a new installation shall have taken place prior to any contract and be considered as new and suitable for retention.	A		20	20

Lifts	Lift car & general equipment	Lift specialist would need to verify. However, maintenance staff advised that these installations are over 20 years old and shows faults regularly, suggesting this is at its end of life.	**DX**		**25**	**0**
NOTES: The above does indicate the majority of the services are aged and either passed their life expectancy or towards the end of their expected life. This is also a good indication that the associated efficiency of the plant is very low compared with modern plant equipment.						

4.3 Site Photos of existing M&E plant / equipment

General Heating Installations – Aged Radiator heating via gas fired boilers.

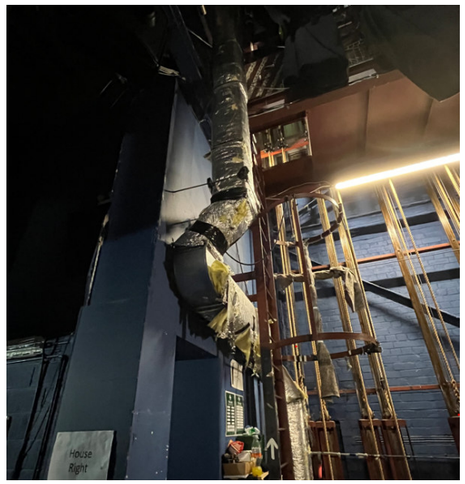
Ground Floor Entrance services includes radiator heating along with sidewall and linear diffusers for ventilation. Down lights and surface mounted light fittings.

Overdoor Air Curtain to entrance draught lobby.

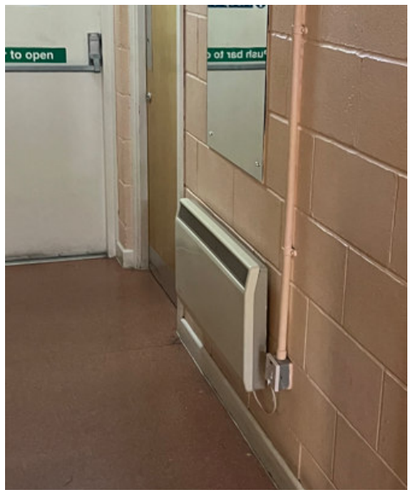
Kitchen Ventilation includes both 4 way blow grilles within ceiling and 2No. ventilation canopies over cooking equipment.

Existing kitchen gas incomers with solenoid valve and gas safety system.

Performance hall ventilation grilled run along either side wall of the hall itself in the form of sidewall grilles providing ventilation, with heating and cooling provided by treating the incoming air. Air delivered below the bleacher seating.



Services to backstage areas are particularly deteriorated. Ventilation distribution systems in particular are showing signs of extreme signs of aging past life expectancy. Backstage area was noticeably warm at time of visit whilst unoccupied.



Heat emitters to some more localised areas, such as changing rooms etc. include electric panel heaters in place of gas central heating via radiators.

Many WC's beyond the performance areas have local electric point of use water heaters and direct electric showers, a number of which are not working and redundant – requiring replacement.

Existing BMS Panel serving Mezzanine plantroom including AHUs, Kitchen controls, cooling unit etc.

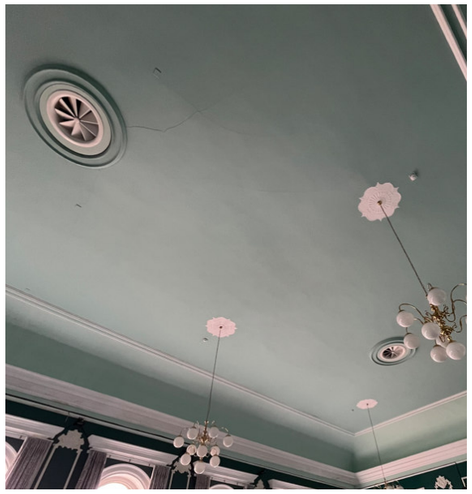
AHU02 serving function room in mezzanine plant room.

Carrier Cooler in external plant area outside mezzanine plantroom. New unit has been ordered outside of any contract works and therefore is to be replaced directly by town hall maintenance team.

AHU01 in external plant area outside mezzanine plantroom, serving main performance hall.

AHU03 in plant area outside mezzanine plantroom, serving kitchen.

Council Chamber services are fed via air terminals providing pre-tempered air into the space via sidewall diffusers and dedicated ventilation pillars within corners of the room.



Air terminals in Victoria Room

Ducted heating and cooling units to Victoria rooms within loft space, provided by fresh air by local fans. Unit over bar space.

Ducted heating and cooling units to Victoria rooms within loft space, provided by fresh air by local fans. Unit over large venue/conference space.

Fire Alarm panel in entrance lobby to Town Hall.

5.0 Vertical Transportation Installations

5.1 Goods Lifts

The existing vertical transportation within the building consists of a goods lift, that appears to be aged and well passed its life expectancy. The lift car is poor condition, with broken lighting, damaged finishes and not in compliance with current legislations, such as the Equality Act 2010, BS8300 Design of buildings and their approaches to meet the needs of disabled people, EN81-70 and Part M of the Building Regulations. (no handrails etc.).

A lift consultant would need to be engaged with to provide a full detailed report regarding the lift, however given its age and the car condition this may not be considered a worthwhile exercise. Town hall staff advised that these are extremely faulty and regular repairs are undertaken with little to no long term effect. Lift replacement is likely required.

Charwood Council Offices Options

Allowances	W/m2 Heating Allowance	Total GIFA (m2)	kW Heating	Cost of Heat Pump Plant (£)	Length of Boreholes Required (m)	Cost of Boreholes (£)
Building B	70	2003	140.21	140210	2804.2	140210
Building C	70	2394	167.58	167580	3351.6	167580
Building D Existing	70	620	43.4	43400	868	43400
Building D New Build	60	1800	108	108000	2160	108000
Building D Total			151.4	151400	3028	151400

Capital Costs	Cost of ASHP	Cost of GSHP	Cost of Gas Boilers
Building B	£ 140,210	£ 280,420	£ 21,032
Building C	£ 167,580	£ 335,160	£ 25,137
Building D Total	£ 151,400	£ 302,800	£ 22,710

	ASHP	GSHP	Gas
Assumed Efficiencies	270%	320%	97%

Gas Costs per kWh	£ 0.08
Electrical Costs per kWh	£ 0.34

Gas Carbon Emission Factor	0.21 kgCO2/kW
Electric Carbon Emission Factor	0.136 kgCO2/kW

Gas Loads	Annual Heating Load (kWh)	Boiler Annual Gas Input (kWh)	Annual Running Costs	Annual Carbon Emissions (kgCO2/yr)
Building B	196294	202365	£ 16,189.20	42497
Building C	234612	241868	£ 19,349.44	50792
Building D Total	211960	218515	£ 17,481.24	45888

ASHP Loads	Annual Heating Load (kWh)	ASHP Annual Electrical Input (kWh)	Annual Running Costs	Annual Carbon Emissions (kgCO2/yr)
Building B	196294	72701	£ 24,718.50	9887
Building C	234612	86893	£ 29,543.73	11817
Building D Total	60760	22504	£ 7,651.26	3061

GSHP Loads	Annual Heating Load (kWh)	GSHP Annual Electrical Input (kWh)	Annual Running Costs	Annual Carbon Emissions (kgCO2/yr)
Building B	196294	61342	£ 20,856.24	8342
Building C	234612	73316	£ 24,927.53	9971
Building D Total	60760	18988	£ 6,455.75	2582

chord consult
Engineering harmony

gleeds

Charnwood Borough Council - Office Appraisal Options

Order of Cost Estimate

Charnwood

NTCM4559 / Version 2

Confidential - September 2023

gleeds

Executive Summary

1 The total estimated construction costs for the proposed schemes excluding VAT are,

Site A - £13,000,000
Site B Option 1 - £3,000,000
Site B Option 2 - £600,000
Site C Option 1 - £12,000,000
Site C Option 2 - £12,400,000
Site C Option 3 - £13,500,000
Site C Option 4 - £13,800,000
Site D Option 1 - £1,800,000
Site D Option 2 - £10,700,000
Site D Option 3 - £12,400,000
Site D Option 4 - £15,100,000
Site E&F - £13,000,000
Site G - £9,400,000

2 The **feasibility cost includes allowances for the following**:

Physical construction works;
Main contractor's preliminaries;
Main contractor's overheads and profit;
Design development risks;
Construction risks;
Project and design fees, including fees in connection with site investigation works and survey fees
Other development and project costs (i.e. non-costs in connection with the project).

3 Notwithstanding the risk allowances for design development and construction included in the cost plan, **no costs have yet been ascertained for any specific risk**. They are simply initial risk allowances, which will be reassessed in conjunction with the employer and project team members as the design develops and as action is taken to reduce the risk exposure.

4 **No allowances have been made in the feasibility estimate for the following**:

Construction/Re-furb costs exclude fit-out works (Loose FF&E and ICT)
Specific exclusions referred to within the feasibility cost
Value added tax (VAT); and
Taxation and incentives (i.e. capital allowances, land remediation relief or grants).
Inflation.
No provision or risk allowances have been included in this estimate for potential risks caused as a consequence of the coronavirus (COVID-19) outbreak, nor for the possibility of wave two of the outbreak. It is therefore, recommended that Charnwood Borough Council make sufficient budgetary allowances for such risks in their investment or development appraisal for the project.

5 This feasibility estimate is based on RIBA Stage 0 information.

6 This feasibility has been prepared in response to an instruction from Charnwood Borough Council.

7 **Estimate Base Date**

Estimate Base Date is 3Q23 - The base cost estimate and the risk allowance estimate have been prepared using rates and prices current at the time the estimate is produced – referred to as the estimate base date.

8 **Procurement and Contract Strategy:-**

The tender price/contract sum being obtained through competitive tendering
Project to be phased and potentially several different construction contracts and contractors required
Fit-out works to be procured by others outside of this cost plan
Phasing or sectional completion not being required
The use of a standard form of contract with non-significant amendments; and
Liquidated and ascertained damages being set at levels that are commercially acceptable to contractors

9 **Pre-construction and Construction Phase Programmes**

The cost plan is based on the following programme requirements:

Pre-construction Phase: N/A
Construction Phase: Various

10 **Main Contractor's Preliminaries**

Main contractor's preliminaries have been calculated on a percentage basis, which has been determined from an assessment of building projects of a similar nature.

11 **Main Contractor's Overheads and Profit:**

Main contractor's overheads and profit have been calculated on the basis of a percentage addition, which has been determined from an assessment of building projects of a similar nature.

An allowance of 6% of the combined total of the building works estimate and main contractor's preliminaries estimate has been made for main contractor's overheads and profit. This is included within the rates.

12 **Project and Design Team and Other Fees:**

Project team and design team consultants' fees;
Other consultants' fees;
Site investigation fees;
Specialist support consultants' fees;
Main contractor's pre-construction fees;
Main contractor's design fees

It is recommended that the client make sufficient budgetary allowances for Project/Design Team and Other Fees in their development or investment appraisal for the scheme.

13 **Other Development and Project Costs**

No allowance has been made in the cost plan for other development and project costs (e.g. land acquisition costs, finance costs, fees and charges in connection with the development, planning contributions, insurances, archaeological works, decanting and relocation costs, which do not form part of the building contract, tenant's costs and contributions, marketing costs, and other employer costs in connection with the building project).

14 Risk Allowances

Risk allowances have been determined and included in the cost plan as follows:

Design development risks: 2.5%
Construction risks: 2.5%
Employer change risks: 2.5%
Employer other risks: 2.5%

Notwithstanding the risk allowances included in the cost plan, no costs have yet been ascertained for any specific risk. They are simply initial risk allowances, which will be reassessed in conjunction with the employer and project team members as the design develops and as action is taken to reduce the risk exposure.

It is recommended that the client makes sufficient budgetary allowances for employer's change risks and employer's other risks in any development or investment appraisal for the project.

15 Inflation

Allowances have been excluded in the cost plan for both tender inflation (i.e. inflation from the estimate base date to the date of tender return) and construction inflation (i.e. inflation from the date of tender return to the contract completion date). These are as follows:

Tender inflation: 5.2%

Construction inflation: Included

16 Value Added Tax (VAT)

No allowance has been included in the cost plan for VAT.

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Information Used

The following drawings and information have been used in the preparation of this Order of Cost Estimate:

1. L2302 - feasibility - Plans
2. IB Accommodation Review Project Brief Dec 2022
3. 31-03-08 Charnwood Borough Council Offices Brief v5
4. L2302-A&G-XX-XX-DR-A-0010 Site B feasibility
5. L2302-A&G-XX-XX-DR-A-0011 Site C Option 1 feasibility
6. L2302-A&G-XX-XX-DR-A-0011 Site C Option 2 feasibility
7. L2302-A&G-XX-XX-DR-A-0011 Site C Option 3 feasibility
8. L2302-A&G-XX-XX-DR-A-0011 Site C Option 4 feasibility
9. L2302-A&G-XX-XX-DR-A-0007 Site D Feasibility
10. Site D4 - Andy Hardy email - 20.09.2023
11. L2302-A&G-XX-XX-DR-A-0005 Woodgate Chambers Plans
12. L2302-A&G-XX-XX-DR-A-0006 Feasibility Study HSBC

Assumptions

The following assumptions/clarifications have been made during the preparation of this Order of Cost Estimate:

1. All costs included within this Estimate are for the Charnwood Borough Council only and exclude works associated with any other phase unless specifically identified otherwise.
2. Refurbishment costs have been based on BCIS Mean/Average £/m2 rates and cross checked against similar benchmarking data from previous Gleeds projects. The level of refurbishment required has been included as per A+G briefing.
3. We have assumed piled foundations will be required to new build options given the site restrictions.
4. Where applicable under the various options we have included an uplift of 10% of extra over works associated to deliver a sustainability and carbon neutral reduction/improvement, the exact scope needs to be defined at the next stage of development. Wholesale improvements to the entire envelope may not be achieve within this budget.
5. Areas used in this report are based on the architects area schedule produced by A+G.
6. Not all options are independent of each other and must be read in conjunction with the overall strategy and appraisal report produced by A+G.
7. We have assumed new build areas will also need a fit-out allowance, which for consistency has been excluded across all refurb and new build cost options.
8. Main contractor preliminary allowances are based on a percentage of the measured works until the scope and brief can be more accuratley ascertained.
9. Professional fees allowances are based on a percentage of the measured works until the scope and brief can be more accuratley ascertained.

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Exclusions

This Order of Cost Estimate excludes any allowances for the following:

1 VAT
2 Statutory and planning fees
3 Licence fees to other / adjoining owners
4 106 fees / contributions
5 278 fees / contributions
6 Grant / taxes
7 Finance charges
8 Temporary accommodation and decanting
9 Works to existing building and external works limited as described
10 Internal staff costs
11 Ground remediation
12 Land Costs
13 Infrastructure reinforcement / upgrade

Pricing profile and market activity

This cost plan/estimate reflects prices forecast through to 3Q2025 based on the scope of works referenced therein.

Gleeds' construction cost forecasts are based on the latest information available from the supply chain. We would, however, highlight the significant recent volatility in costs and supply shortages driven by the longer term effects of the COVID-19 pandemic, Brexit, and the Russia-Ukraine war, coupled with ongoing delivery challenges due to skills shortages. The predicted fall in construction output, which tends to stabilise pricing levels, has not materialised with the UK reported to be avoiding recession in 2023. Public sector demand is holding up, with capital investment being reaffirmed in the spring budget, but private sector investment is being impacted by the combined effects of high interest rates and inflation, particularly in the housing sector. However, The construction industry, like the rest of the UK economy, will continue to be impacted by changes in global forces — notably the Ukraine war and the progress of the Chinese economy.

Project's supply conditions are improving, reflecting greater availability of construction products and materials, alongside fewer logistics bottlenecks, though labour shortages remain a major challenge. The market is now being characterised by both regional and sector variations based on project pipelines which directly influences risk acceptance and appetite. As a result, we highlight that Gleeds advice is current at the date of issue but, by necessity, is subject to alteration due to changing market conditions and disruptors. We therefore recommend a regular review of project costs to account for the latest feedback from the market.

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	Various	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	Various m2

PROJECT SUMMARY

See individual summaries for descriptions of each option.

Order of Cost Estimate

	Group Element	Cost (£)
1	Site A	13,000,000
2	Site B Option 1	3,000,000
3	Site B Option 2	600,000
4	Site C Option 1	12,000,000
5	Site C Option 2	12,400,000
6	Site C Option 3	13,500,000
7	Site C Option 4	13,800,000
8	Site D Option 1	1,800,000
9	Site D Option 2	10,700,000
10	Site D Option 3	12,400,000
11	Site D Option 4	15,100,000
12	Site E&F	13,000,000
13	Site G	9,400,000

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	2,462 m2

PROJECT SUMMARY

Site A - New Build Southfields Carpark site A

Order of Cost Estimate

	Group Element	Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE A			8,223,956		63.3%
	BUILDING WORKS ESTIMATE			8,223,956	-	63.3%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	1,233,593		
	SUB-TOTAL			**9,457,549**	**-**	**72.8%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	567,453		
	WORKS COST ESTIMATE			10,025,002	-	77.1%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	1,203,000		
	SUB-TOTAL			**11,228,002**	**-**	86.4%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**11,228,002**	**-**	86.4%
11	RISK ALLOWANCES ESTIMATE					
	1 Design Risk		2.5%	280,700		2.2%
	2 Construction Risk		2.5%	280,700		2.2%
	3 Employers Change Risk		2.5%	280,700		2.2%
	4 Employers Other Risk		2.5%	280,700		2.2%
	ORDER OF COST (excluding inflation)			**12,350,802**	**-**	**95.0%**
7	INFLATION ESTIMATE					
	1 TENDER INFLATION ESTIMATE		5.20%	642,242		
	2 CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**13,000,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site A Cost Estimate

Description	Qty	Unit	Rate	Total £
Southfields Carpark site A				
Allowance for site clearance	1,000	m2	5	5,000
New Build - Office Accommodation - BCIS Offices	2,462	m2	2,358	5,805,396
Extra over allowance for piled foundations	2,462	m2	100	246,200
E/O allowance for sustainability / carbon neutral brief	10%	%	6,056,596	605,660
Allowance for external works	2,462	m2	350	861,700
Allowance for incoming services	1	Item	200,000	200,000
Public Realm works - Scope TBC - Allowance	1	Item	500,000	500,000
			GROUP ELEMENT - TOTAL	**8,223,956**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	2,253 m2

PROJECT SUMMARY

Site B Option 1 - Light touch refurbishment of Site B, Site C retained with no works

Order of Cost Estimate

	Group Element	Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE B - Option 1			1,927,475		64.2%
	BUILDING WORKS ESTIMATE			1,927,475	-	64.2%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	289,121		
	SUB-TOTAL			**2,216,596**	**-**	**73.9%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	132,996		
	WORKS COST ESTIMATE			2,349,592	-	78.3%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	281,951		
	SUB-TOTAL			**2,631,543**	**-**	87.7%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**2,631,543**	**-**	87.7%
11	RISK ALLOWANCES ESTIMATE					
	1 Design Risk		2.5%	65,789		2.2%
	2 Construction Risk		2.5%	65,789		2.2%
	3 Employers Change Risk		2.5%	65,789		2.2%
	4 Employers Other Risk		2.5%	65,789		2.2%
	ORDER OF COST (excluding inflation)			**2,894,697**	**-**	**96.5%**
7	INFLATION ESTIMATE					
	1 TENDER INFLATION ESTIMATE		5.20%	150,524		
	2 CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**3,000,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site B1 Cost Estimate

Description	Qty	Unit	Rate	Total £
Refurbished / upgrade the existing main building Sites B and C, and let the remainder				
Refurb old house (site B) - This is based on a light touch refurbishment only as per A+G scope - Assumed no alterations to existing services	2,003	m2	750	1,502,250
Main 1980's building (site C): Divide building: horizontally or vertically. Consolidate all CBC functions into 1 area or floor, let the remainder - Assumed no works to Site C, building retained by CBC		m2	1,469	-
Allowance to create new stair cores - Not required for this option	-	m2	1,200	-
Allowance for light touch refurbishment to shared circulation areas	250	m2	1,000	250,000
Adjacent stand-alone ICS building (site D): Refurb and let.		m2	1,469	-
Allowance for fit out works - BCIS Offices - Excludes Building B	-	m2	1,094	-
E/O allowance for sustainability / carbon neutral brief	10%	%	1,752,250	175,225
No allowance for external works - Excluded				
Assumed all existing FF&E retained / reused. No allowance for fit out works				
Excludes any fit out works by tenants				
			GROUP ELEMENT - TOTAL	**1,927,475**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	100 m2

PROJECT SUMMARY

Site B Option 2 - Separating Site B and C including services. Assumed no refurbishment no either site.

Order of Cost Estimate

	Group Element	Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE B - Option 2			410,000		68.3%
	BUILDING WORKS ESTIMATE			410,000	-	68.3%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	61,500		
	SUB-TOTAL			**471,500**	**-**	**78.6%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	28,290		
	WORKS COST ESTIMATE			499,790	-	83.3%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	59,975		
	SUB-TOTAL			**559,765**	**-**	93.3%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**559,765**	**-**	93.3%
11	RISK ALLOWANCES ESTIMATE					
	1 Design Risk		2.5%	13,994		2.3%
	2 Construction Risk		2.5%	13,994		2.3%
	3 Employers Change Risk		2.5%	13,994		2.3%
	4 Employers Other Risk		2.5%	13,994		2.3%
	ORDER OF COST (excluding inflation)			**615,741**	**-**	**102.6%**
7	INFLATION ESTIMATE					
	1 TENDER INFLATION ESTIMATE		5.20%	32,019		
	2 CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**600,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site B2 Cost Estimate

Description	Qty	Unit	Rate	Total £
Refurbished / upgrade the existing main building Sites B and C, and let the remainder				
Refurb old house (site B) - No works	-	m2	750	-
Main 1980's building (site C): No works		m2	1,469	-
Allowance to create new stair cores - Not required for this option	-	m2	1,200	-
Allowance to separate / block Site B and C	1	Item	100,000	100,000
Adjacent stand-alone ICS building (site D): Refurb and let.		m2	1,469	-
Allowance for fit out works - BCIS Offices - Excludes Building B	-	m2	1,094	-
Allowance to modify / provide separate services to Site C and B	1	Item	300,000	300,000
E/O allowance for sustainability / carbon neutral brief	10%	%	100,000	10,000
No allowance for external works - Excluded				
Assumed all existing FF&E retained / reused. No allowance for fit out works				
Excludes any fit out works by tenants				
			GROUP ELEMENT - TOTAL	**410,000**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	4,774 m2

PROJECT SUMMARY

Site C Option 1, refurbishment of green area in Site B CBC existing area (192 m2). Refurbishment of ground and first floor of Site C. (Ground Floor - Office to Let; First Floor - CBC Office)

Order of Cost Estimate

	Group Element	Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE C - Option 1			7,585,332		63.2%
	BUILDING WORKS ESTIMATE			7,585,332	-	63.2%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	1,137,800		
	SUB-TOTAL			**8,723,131**	**-**	**72.7%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	523,388		
	WORKS COST ESTIMATE			9,246,519	-	77.1%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	1,109,582		
	SUB-TOTAL			**10,356,102**	**-**	86.3%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**10,356,102**	**-**	86.3%
11	RISK ALLOWANCES ESTIMATE					
	1 Design Risk		2.5%	258,903		2.2%
	2 Construction Risk		2.5%	258,903		2.2%
	3 Employers Change Risk		2.5%	258,903		2.2%
	4 Employers Other Risk		2.5%	258,903		2.2%
	ORDER OF COST (excluding inflation)			**11,391,712**	**-**	**94.9%**
7	INFLATION ESTIMATE					
	1 TENDER INFLATION ESTIMATE		5.20%	592,369		
	2 CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**12,000,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site C1 Cost Estimate

Description	Qty	Unit	Rate	Total £
Refurbished / upgrade the existing main building Sites B and C, and let the remainder				
Refurb old house (site B) - This is based on a light touch refurbishment only as per A+G scope - Costs are included in Site B breakdowns		m2	750	-
Main 1980's building (site C): Divide building: horizontally or vertically. Consolidate all CBC functions into 1 area or floor, let the remainder - Assumed no works to Site C, building retained by CBC	4,524	m2	1,469	6,645,756
Allowance to create new staircores - Not required	-	m2	1,200	-
Allowance for light touch refurbishment to shared circulation areas	250	m2	1,000	250,000
Adjacent stand-alone ICS building (site D): Refurb and let.		m2	1,469	-
E/O allowance for sustainability / carbon neutral brief	10%	%	6,895,756	689,576
No allowance for external works - Excluded				
Assumed all existing FF&E retained / reused. No allowance for fit out works				
Excludes any fit out works by tenants				
			GROUP ELEMENT - TOTAL	**7,585,332**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	4,524 m2

PROJECT SUMMARY

Site C Option 2, refurbishment of Ground and First Floor of C. Creation of new entrance to provide front of house on ground floor of C.

Order of Cost Estimate

Group Element		Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE C - Option 2			7,860,332		63.4%
	BUILDING WORKS ESTIMATE			7,860,332	-	63.4%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	1,179,050		
	SUB-TOTAL			**9,039,381**	**-**	**72.9%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	542,363		
	WORKS COST ESTIMATE			9,581,744	-	77.3%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	1,149,809		
	SUB-TOTAL			**10,731,554**	**-**	86.5%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**10,731,554**	**-**	86.5%
11	RISK ALLOWANCES ESTIMATE					
1	Design Risk		2.5%	268,289		2.2%
2	Construction Risk		2.5%	268,289		2.2%
3	Employers Change Risk		2.5%	268,289		2.2%
4	Employers Other Risk		2.5%	268,289		2.2%
	ORDER OF COST (excluding inflation)			**11,804,709**	**-**	**95.2%**
7	INFLATION ESTIMATE					
1	TENDER INFLATION ESTIMATE		5.20%	613,845		
2	CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**12,400,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site C2 Cost Estimate

Description	Qty	Unit	Rate	Total £
Refurbished / upgrade the existing main building Sites B and C, and let the remainder				
Refurb old house (site B) - This is based on a light touch refurbishment only as per A+G scope - Costs are included in Site B breakdowns	-	m2	750	-
Main 1980's building (site C): Divide building: horizontally or vertically. Consolidate all CBC functions into 1 area or floor, let the remainder - Assumed no works to Site C, building retained by CBC	4,524	m2	1,469	6,645,756
Allowance to create new staircores - Not required	-	m2	1,200	-
Allowance for light touch refurbishment to shared circulation areas	250	m2	1,000	250,000
Form new entrance to Site C including new access ramp	1	Item	250,000	250,000
Adjacent stand-alone ICS building (site D): Refurb and let.		m2	1,469	-
E/O allowance for sustainability / carbon neutral brief	10%	%	7,145,756	714,576
No allowance for external works - Excluded				
Assumed all existing FF&E retained / reused. No allowance for fit out works				
Excludes any fit out works by tenants				
			GROUP ELEMENT - TOTAL	**7,860,332**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	4,524 m2

PROJECT SUMMARY

Site C Option 3, Site C retained, Site B severed for sale. Refurb: Ground and First Floor of C include for two new entrances, canopy, ramps and steps, one for CBC front of house, one for the remaining Let areas of the ground floor. Construct new escape stair to rear.

Order of Cost Estimate

	Group Element	Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE C - Option 3			8,517,582		63.1%
	BUILDING WORKS ESTIMATE			8,517,582	-	63.1%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	1,277,637		
	SUB-TOTAL			**9,795,219**	**-**	**72.6%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	587,713		
	WORKS COST ESTIMATE			10,382,932	-	76.9%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	1,245,952		
	SUB-TOTAL			**11,628,884**	**-**	86.1%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**11,628,884**	**-**	86.1%
11	RISK ALLOWANCES ESTIMATE					
	1 Design Risk		2.5%	290,722		2.2%
	2 Construction Risk		2.5%	290,722		2.2%
	3 Employers Change Risk		2.5%	290,722		2.2%
	4 Employers Other Risk		2.5%	290,722		2.2%
	ORDER OF COST (excluding inflation)			**12,791,772**	**-**	**94.8%**
7	INFLATION ESTIMATE					
	1 TENDER INFLATION ESTIMATE		5.20%	665,172		
	2 CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**13,500,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site C3 Cost Estimate

Description	Qty	Unit	Rate	Total £
Refurbished / upgrade the existing main building Sites B and C, and let the remainder				
Refurb old house (site B) - This is based on a light touch refurbishment only as per A+G scope	-	m2	750	-
Main 1980's building (site C): Divide building: horizontally or vertically. Consolidate all CBC functions into 1 area or floor, let the remainder - Assumed no works to Site C, building retained by CBC	4,524	m2	1,469	6,645,756
Allowance to separate / block Site B and C	1	Item	100,000	100,000
Allowance to create new staircore to rear	30	m2	3,250	97,500
Insert new lift	1	Item	100,000	100,000
Allowance for light touch refurbishment to shared circulation areas - *(included in Site C refurb)*	-	m2	1,000	-
Form new entrance to Site C including new access ramp	2	Item	250,000	500,000
Adjacent stand-alone ICS building (site D): Refurb and let.		m2	1,469	-
Allowance to modify / provide separate services to Site C and B	1	Item	300,000	300,000
E/O allowance for sustainability / carbon neutral brief	10%	%	7,743,256	774,326
No allowance for external works - Excluded				
Assumed all existing FF&E retained / reused. No allowance for fit out works				
Excludes any fit out works by tenants				
			GROUP ELEMENT - TOTAL	**8,517,582**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	4,524 m2

PROJECT SUMMARY

Site C Option 4, Site C retained with building divided vertically. Creation of two new entrances, ramps, steps and canopies and two new stair cores for fire escapes at the rear. New accomodation stair core within the area for sub-let. Assumption Building B link is to be severed.

Order of Cost Estimate

	Group Element	Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE C - Option 4			8,734,832		63.3%
	BUILDING WORKS ESTIMATE			8,734,832	-	63.3%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	1,310,225		
	SUB-TOTAL			**10,045,056**	**-**	**72.8%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	602,703		
	WORKS COST ESTIMATE			10,647,760	-	77.2%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	1,277,731		
	SUB-TOTAL			**11,925,491**	**-**	86.4%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**11,925,491**	**-**	86.4%
11	RISK ALLOWANCES ESTIMATE					
	1 Design Risk		2.5%	298,137		2.2%
	2 Construction Risk		2.5%	298,137		2.2%
	3 Employers Change Risk		2.5%	298,137		2.2%
	4 Employers Other Risk		2.5%	298,137		2.2%
	ORDER OF COST (excluding inflation)			**13,118,040**	**-**	**95.1%**
7	INFLATION ESTIMATE					
	1 TENDER INFLATION ESTIMATE		5.20%	682,138		
	2 CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**13,800,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site C4 Cost Estimate

Description	Qty	Unit	Rate	Total £
Refurbished / upgrade the existing main building Sites B and C, and let the remainder				
Refurb old house (site B) - This is based on a light touch refurbishment only as per A+G scope	-	m2	750	-
Main 1980's building (site C): Divide building: horizontally or vertically. Consolidate all CBC functions into 1 area or floor, let the remainder - Assumed no works to Site C, building retained by CBC	4,524	m2	1,469	6,645,756
Allowance to separate / block Site B and C	1	Item	100,000	100,000
Allowance to create new staircores	60	m2	3,250	195,000
Insert new lift	2	Item	100,000	200,000
Allowance for light touch refurbishment to shared circulation areas - *(included in Site C refurb)*	-	m2	1,000	-
Form new entrance to Site C including new access ramp	2	Item	250,000	500,000
Adjacent stand-alone ICS building (site D): Refurb and let.		m2	1,469	-
Allowance to modify / provide separate services to Site C and B	1	Item	300,000	300,000
E/O allowance for sustainability / carbon neutral brief	10%	%	7,940,756	794,076
No allowance for external works - Excluded				
Assumed all existing FF&E retained / reused. No allowance for fit out works				
Excludes any fit out works by tenants				
			GROUP ELEMENT - TOTAL	**8,734,832**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	686 m2

PROJECT SUMMARY

Site D - Refurbish former ICS building for sub-letting.

Order of Cost Estimate

Group	Element	Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE D - Option 1			1,108,507		61.6%
	BUILDING WORKS ESTIMATE			1,108,507	-	61.6%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	166,276		
	SUB-TOTAL			**1,274,784**	**-**	**70.8%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	76,487		
	WORKS COST ESTIMATE			1,351,271	-	75.1%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	162,152		
	SUB-TOTAL			**1,513,423**	**-**	84.1%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**1,513,423**	**-**	84.1%
11	RISK ALLOWANCES ESTIMATE					
1	Design Risk		2.5%	37,836		2.1%
2	Construction Risk		2.5%	37,836		2.1%
3	Employers Change Risk		2.5%	37,836		2.1%
4	Employers Other Risk		2.5%	37,836		2.1%
	ORDER OF COST (excluding inflation)			**1,664,765**	**-**	**92.5%**
7	INFLATION ESTIMATE					
1	TENDER INFLATION ESTIMATE		5.20%	86,568		
2	CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**1,800,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site D1 Cost Estimate

Description	Qty	Unit	Rate	Total £
Refurbish / upgrade ICS building site D and extend to provide a new Council HQ.				
Build new block	-	m2	2,358	-
Extra over allowance for piled foundations	-	m2	100	-
Extra over allowance for first floor link corridor	-	Item	150,000	-
Adjacent stand-alone ICS building (site D): Refurb and let.	686	m2	1,469	1,007,734
Allowance for external works	-	m2	350	-
Allowance for incoming services	-	Item	200,000	-
E/O allowance for sustainability / carbon neutral brief	10%	%	1,007,734	100,773
No allowance for additional car parking spaces that are lost from the development.				
			GROUP ELEMENT - TOTAL	**1,108,507**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	2,386 m2

PROJECT SUMMARY

Site D Option 2 - Refurbish / upgrade ICS building site D and new build extension including new services and first floor link corridor to create new CBC offices.

Order of Cost Estimate

	Group Element	Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE D - Option 2			6,744,467		63.0%
	BUILDING WORKS ESTIMATE			6,744,467	-	63.0%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	1,011,670		
	SUB-TOTAL			**7,756,138**	**-**	**72.5%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	465,368		
	WORKS COST ESTIMATE			8,221,506	-	76.8%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	986,581		
	SUB-TOTAL			**9,208,086**	**-**	86.1%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**9,208,086**	**-**	86.1%
11	RISK ALLOWANCES ESTIMATE					
	1 Design Risk		2.5%	230,202		2.2%
	2 Construction Risk		2.5%	230,202		2.2%
	3 Employers Change Risk		2.5%	230,202		2.2%
	4 Employers Other Risk		2.5%	230,202		2.2%
	ORDER OF COST (excluding inflation)			**10,128,895**	**-**	**94.7%**
7	INFLATION ESTIMATE					
	1 TENDER INFLATION ESTIMATE		5.20%	526,703		
	2 CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**10,700,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site D2 Cost Estimate

Description	Qty	Unit	Rate	Total £
Refurbish / upgrade ICS building site D and extend to provide a new Council HQ.				
Build new block	1,700	m2	2,358	4,008,600
Extra over allowance for piled foundations	1,700	m2	100	170,000
Extra over allowance for first floor link corridor	1	Item	150,000	150,000
Adjacent stand-alone ICS building (site D): Refurb and let.	686	m2	1,469	1,007,734
Allowance for external works	1,700	m2	350	595,000
Allowance for incoming services	1	Item	200,000	200,000
E/O allowance for sustainability / carbon neutral brief	10%	%	6,131,334	613,133
No allowance for additional car parking spaces that are lost from the development.				
			GROUP ELEMENT - TOTAL	**6,744,467**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	2,400 m2

PROJECT SUMMARY

Site D Option 3 - Demolition of existing Site D building, new build of bespoke offices including new incoming services and external works.

Order of Cost Estimate

	Group Element	Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE D - Option 3			7,859,620		63.4%
	BUILDING WORKS ESTIMATE			7,859,620	-	63.4%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	1,178,943		
	SUB-TOTAL			**9,038,563**	**-**	**72.9%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	542,314		
	WORKS COST ESTIMATE			9,580,877	-	77.3%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	1,149,705		
	SUB-TOTAL			**10,730,582**	**-**	86.5%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**10,730,582**	**-**	86.5%
11	RISK ALLOWANCES ESTIMATE					
	1 Design Risk		2.5%	268,265		2.2%
	2 Construction Risk		2.5%	268,265		2.2%
	3 Employers Change Risk		2.5%	268,265		2.2%
	4 Employers Other Risk		2.5%	268,265		2.2%
	ORDER OF COST (excluding inflation)			**11,803,640**	**-**	**95.2%**
7	INFLATION ESTIMATE					
	1 TENDER INFLATION ESTIMATE		5.20%	613,789		
	2 CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**12,400,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site D3 Cost Estimate

Description	Qty	Unit	Rate	Total £
Refurbish / upgrade ICS building site D and extend to provide a new Council HQ.				
Demolition of Site D	686	m2	250	171,500
Build new block	2,400	m2	2,358	5,659,200
Extra over allowance for piled foundations	2,400	m2	100	240,000
Extra over allowance for first floor link corridor	-	Item	150,000	-
Allowance for external works	2,400	m2	350	840,000
Allowance for incoming services	1	Item	250,000	250,000
E/O allowance for sustainability / carbon neutral brief	10%	%	6,989,200	698,920
No allowance for additional car parking spaces that are lost from the development.				
			GROUP ELEMENT - TOTAL	**7,859,620**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	2,720 m2

PROJECT SUMMARY

Site D Option 4 - Refurb and extension to ICS building to create lettable space.
New build, 5 storey office block for CBC offices, connected to ICS extension.

Order of Cost Estimate

	Group Element	Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE D - Option 4			9,536,153		63.2%
	BUILDING WORKS ESTIMATE			9,536,153	-	63.2%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	1,430,423		
	SUB-TOTAL			**10,966,576**	**-**	**72.6%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	657,995		
	WORKS COST ESTIMATE			11,624,571	-	77.0%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	1,394,948		
	SUB-TOTAL			**13,019,519**	**-**	86.2%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**13,019,519**	**-**	86.2%
11	RISK ALLOWANCES ESTIMATE					
	1 Design Risk		2.5%	325,488		2.2%
	2 Construction Risk		2.5%	325,488		2.2%
	3 Employers Change Risk		2.5%	325,488		2.2%
	4 Employers Other Risk		2.5%	325,488		2.2%
	ORDER OF COST (excluding inflation)			**14,321,471**	**-**	**94.8%**
7	INFLATION ESTIMATE					
	1 TENDER INFLATION ESTIMATE		5.20%	744,716		
	2 CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**15,100,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site D4 Cost Estimate

Description	Qty	Unit	Rate	Total £
Refurbish / upgrade ICS building site D and extend to provide a new Council HQ.				
Demolition of Site D	-	m2	250	-
Build new block over five floors	2,400	m2	2,358	5,659,200
ICS New Build Extension over two floors	320	m2	2,358	754,560
Refurb to the existing ICS Building	630	m2	1,469	925,470
Extra over allowance for piled foundations	2,400	m2	100	240,000
Extra over allowance for first floor link corridor	-	Item	150,000	-
Allowance for external works	2,400	m2	350	840,000
Allowance for incoming services	1	Item	250,000	250,000
E/O allowance for sustainability / carbon neutral brief	10%	%	8,669,230	866,923
No allowance for additional car parking spaces that are lost from the development.				
			GROUP ELEMENT - TOTAL	**9,536,153**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	2,687 m2

PROJECT SUMMARY

Woodgate Chambers (Site E) - retention of historic part of the building coupled with demolition and rebuilding of remainder, including Town Hall Chambers. Including a first floor link into the rear of the Town Hall. Refurbishment of Victoria Rooms & Council Chamber within the Town Hall.

Order of Cost Estimate

Group Element		Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE E + F			8,196,916		63.1%
	BUILDING WORKS ESTIMATE			8,196,916	-	63.1%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	1,229,537		
	SUB-TOTAL			**9,426,454**	**-**	**72.5%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	565,587		
	WORKS COST ESTIMATE			9,992,041	-	76.9%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	1,199,045		
	SUB-TOTAL			**11,191,086**	**-**	86.1%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**11,191,086**	**-**	86.1%
11	RISK ALLOWANCES ESTIMATE					
	1 Design Risk		2.5%	279,777		2.2%
	2 Construction Risk		2.5%	279,777		2.2%
	3 Employers Change Risk		2.5%	279,777		2.2%
	4 Employers Other Risk		2.5%	279,777		2.2%
	ORDER OF COST (excluding inflation)			**12,310,194**	**-**	**94.7%**
7	INFLATION ESTIMATE					
	1 TENDER INFLATION ESTIMATE		5.20%	640,130		
	2 CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**13,000,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site E&F Cost Estimate

Description	Qty	Unit	Rate	Total £
Demolish and rebuild new Council HQ on Woodgate Chambers site E				
Demolition of buildings E and F as per A+G plans	1,518	m2	250	379,500
Allowance for temporary supports	1	Item	200,000	200,000
Extra over allowance for asbestos removal	1	Item	50,000	50,000
New Build - Office Accommodation - BCIS Offices	1,624	m2	2,358	3,829,392
E/O allowance for piled foundations	1,624	m2	100	162,400
Refurbishment of Building E spaces	513	m2	2,500	1,282,500
Refurbishment of Town Hall spaces - Assumed light touch refurbishment no allowance for alteration to existing services	550	m2	1,000	550,000
Allowance for external works / public realm	2,137	m2	350	747,950
Allowance for incoming services	1	Item	250,000	250,000
E/O allowance for sustainability / carbon neutral brief	10%	%	7,451,742	745,174
Based on L2302-A&G-XX-XX-DR-A-0005 Woodgate Chambers Plans				
GROUP ELEMENT - TOTAL				**8,196,916**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

FUNCTION SUMMARY

Job Nr	:	NTCM4559	Office	:	Nottingham
Version	:	B	Contact	:	A Deverill
Job Name	:	CBC Offices			
Job Location	:	Loughborough	SfB Code	:	
Client	:	Charnwood Borough Council	BCIS Region	:	Leicestershire
Contract Type	:	TBC	Practical Completion	:	1Q26
Contract Period	:	TBC	Date of Cost Plan	:	Sep-23
Tender Date	:	2Q24	Cost Base Date	:	3Q23
Start on site	:	3Q24	Scheme GIA	:	2,372 m2

PROJECT SUMMARY

Site G - Part demolition of the HSBC building and construction of the four storey extension to the rear. Connections through to the Town Hall to allow use of the Victoria Rooms, the Council Chamber and other areas, all within the Town Hall.

Order of Cost Estimate

Group Element		Area (m²)	Unit Rate	Cost (£)	Cost/m2 GIFA (£)	% of Total
1	SITE G			5,976,296		63.6%
	BUILDING WORKS ESTIMATE			5,976,296	-	63.6%
7	MAIN CONTRACTORS PRELIMINARIES ESTIMATE		15.0%	896,444		
	SUB-TOTAL			**6,872,741**	**-**	**73.1%**
8	MAIN CONTRACTORS OHP ESTIMATE		6.0%	412,364		
	WORKS COST ESTIMATE			7,285,105	-	77.5%
9	PROJECT / DESIGN FEES ESTIMATE		12.0%	874,213		
	SUB-TOTAL			**8,159,318**	**-**	86.8%
10	OTHER DEVELOPMENT / PROJECT COSTS ESTIMATE			-		0.0%
	BASE COST ESTIMATE			**8,159,318**	**-**	86.8%
11	RISK ALLOWANCES ESTIMATE					
1	Design Risk		2.5%	203,983		2.2%
2	Construction Risk		2.5%	203,983		2.2%
3	Employers Change Risk		2.5%	203,983		2.2%
4	Employers Other Risk		2.5%	203,983		2.2%
	ORDER OF COST (excluding inflation)			**8,975,250**	**-**	**95.5%**
7	INFLATION ESTIMATE					
1	TENDER INFLATION ESTIMATE		5.20%	466,713		
2	CONSTRUCTION INFLATION ESTIMATE			Included		
	ORDER OF COST (including inflation)			**9,400,000**	**-**	**100.0%**

PROJECT: CHARNWOOD BOROUGH COUNCIL OFFICE APPRAISAL
ORDER OF COST ESTIMATE
DATE: SEPTEMBER 2023

gleeds

Site G Cost Estimate

Description	Qty	Unit	Rate	Total £
Rebuilding / retention in part of the HSBC building				
Refurbishment of HSBC Building	641	m2	2,057	1,318,281
Demolition of buildings as per A+G plans	272	m2	250	68,000
New Build / Extension - Office Accommodation - BCIS	1,181	m2	2,358	2,784,798
E/O Allowance for piled foundations	1,181	m2	100	118,100
E/O Allowance for breaking through	2	Nr	10,000	20,000
E/O allowance for site restrictions	1,181	m2	200	236,200
Allowance for incoming services	1	Item	200,000	200,000
E/O allowance for sustainability / carbon neutral brief	10%	%	4,309,179	430,918
Allowance for the refurbishment of Victoria Rooms & Council Chambers	550	m2	1,000	550,000
Allowance for refurbishment of areas of Town Hall affected by HSBC New Build. (New kitchen fit-out, new mechanical	1	Item	250,000	250,000
Assumed HSBC building is made structurally sound				
Temporary access is going to be challenging e/o for cranes etc				
			GROUP ELEMENT - TOTAL	**5,976,296**

Council office options
Meeting via Teams 22 August 2023

Present

Andrew Hardy A&G Architects
Richard Bennett CBC
Jim Worley CBC
Martin Jones CBC
Mark Fennell CBC
Andy Beard CBC

Background and purpose

Purpose of the meeting was to discuss without prejudice the various options for the council's future offices in response to the options assessment previously circulated by AH. It is understood the options are at an early stage and that the Council is yet to express any preference.

RB explained planning officers had not been involved in discussions about the estate and were maintaining the separation between the council and planning authority.

AH explained the Council were looking for c2,400 m2 of floorspace including committee rooms, back office and operational floorspace (approximately 100 workstations (hot-desks).

RB provided an overview explaining that most of the sites in question were affected directly or indirectly by heritage assets whether listed or locally listed buildings or conservations areas and that any proposal would need to consider the impact on these.

The Options discussed differed slightly from those previously submitted but were of a kind. The order of this note reflects what was discussed in the meeting.

In all cases Bee Hive is intended as the parking solution.

There was a discussion at the end of the meeting about the importance of 'Civic Design' and whether this was a planning requirement. In the same way as the Council should be exemplar in terms of sustainable buildings and construction techniques, so it should be in design. Officers explained that high quality design was an important policy objective and that the council should expect to be a leader in this regard as well as in responding to climate change. It was also felt incumbent on the council to create a public building that was legible and identifiable as a democratic institution and one that didn't hide from public view. Legibility should only define the function of the building, but also its functioning, in terms of architectural techniques to ensure it is inviting and welcoming.

Option 1 Southfields Car park

This is considered a prominent site in plain sight as your drive along Southfields from Leicester Road. Opportunity to make something of the corner of the site and enhance the public realm. Bedford Square Gateway is further along Southfields and there is an opportunity to tie into that.

AH explained the proposal was 3 storeys likely to be passivehaus standard. Each storey 4.2m which would make the building equivalent to about 5 storeys in height overall. We discussed the relationship to the Premier Inn which is 6 storeys and the possibility of the corner part of the building being a further storey in height with potentially an atrium on the third storey to bring benefit from borrowed light into the building given that two elevations were close to boundaries.

We questioned if there was sufficient operational space around the building.

We noted the glass façade and opportunities to benefit from solar gain as well as the difficulty in achieving thermal standards with glazing.

The elevation to the flats adjacent would need to be stepped back given rear habitable rooms on the flats. This might mean the elevation needs to be brought further back than shown on the plan or some other design device applied to protect privacy.

The layby is no longer in use and it was suggested there may be scope to purchase this from the County Council HA to help extend the site area overall.

Option 2 Existing Southfields estate.

There were a number of permutations with this option. It was generally seen as likely to be cheapest option overall and might provide a quick solution. We discussed the opportunities for the council to meet its carbon neutrality commitments including EWI, loft insulation and ground source and air to air heat pumps. However, it was also recognised that this would involve diminishing returns as consequential effects were addressed.

Whatever permutation is favoured there will be a need to provide an arrival point with some form of steps or canopy. While the building is not particularly attractive the opportunity should be taken to improve its appearance and give it a sense of civic gravitas

It is considered that the desire to reach Passivhaus standards with this option would be very challenging.

Option 3 ICS building

AH outlined the proposal to build a new block adjacent to the existing ICS building and linking it at first floor by a pedestrian bridge. The extension would be on the plot at the old entrance gate to Southfields and address the crossroads at Leicester Road.

The notion of linking the two blocks by pedestrian bridge was not considered ideal as it would dislocate the two parts of the building (and council) and from a design point of view bridges of this sort are rarely an attractive addition to a building. It was suggested the two buildings be joined as one and the access to the parking be taken around the front of the site (Southfields Road and Leicester Road frontage). We then explored making better use of the land by knocking down the ICS building and rebuilding to the frontage of Leicester Road and Southfields Road and potentially also linking into the area currently occupied by the public toilets. This was seen as a more satisfactory form of development from an urban design point of view if the ICS building could be demolished.

There was a real opportunity to link the park to the town centre by an innovative carbon neutral proposal that made the best use of this corner plot and that responded well to the

Luxurio scheme in providing an iconic gateway building to the town centre and strong public realm There were several policy objectives that could be secured through this idea.

As for option 1, and unlike the options that involve the reuse of existing buildings in whole or part, building a purpose-built office would give the best opportunity to build a passivehaus standard building minimising the council's energy costs into the future.

Option 4 Woodgate Chambers and Town Hall Chambers redevelopment

This option involved the refurbishment of Woodgate Chambers but the demolition of Glebe House and other buildings along Town Hall Passage to realise a two or three story new build office that connected into the Town Hall complex. There are known land ownership issues and rights of access to the car park. Town Hall Passage is a highway.

It was noted that the Preston Room is not a good committee room given its layout and the public access or capacity is not great. The Council Chamber is also not ideal for committees. the Victoria Room is diabolical as a committee room given its very poor acoustics, poor lighting and problems with solar gain in the summer. There didn't seem to be much to gain from this redevelopment and the ability to create an energy efficient scheme seemed unlikely.

The proposal was also hidden in the back land of the town hall and would have no civic presence in the town. No civic leadership.

Option 5 HSBC building and Town Hall

This option involved building to the rear of the HSBC façade and linking through to the Town Hall at first floor level to the existing Mezzanine, which has hitherto been unutilised. The town hall is 400mm higher ground floor level than the HSBC building.

HSBC is a grade ii listed building. Not much left of significance inside the building following the fire but the façade is good.

MJ has visited the HSBC site following the fire to assess the damage. MJ subsequently met with A+G Architects to discuss in detail the proposals for this option. As stated, other than the façade and the pyramidal roofs above the projections to each side, there is very little historic fabric left. There were some interesting moulded coffered ceilings above the main Banking Hall (previously hidden by a modern suspended ceiling) but these have been extensively damaged by the fire and subsequent ingress of water. It has been agreed that these features will be preserved 'by record' and the consultants appointed by HSBC are currently progressing this.

There is an interesting staircase alongside the party wall to the Town Hall and it is pleasing to see from the option proposal that this has been retained.

We explored the various floor levels and considered the potential of a alternative roof design and an atrium above the mezzanine.

This option was considered very challenging and costly to bring forward and the potential for an energy efficient carbon neutral building looked less likely than other options

Option 6 The Ramada

This option was not considered

Observations.

The options 2 and 3 which are adjacent to the park have the potential to benefit from the use ground source heat recovery in support of any desire to achieve a high standard of thermal performance while having a low ‘carbon footprint’.

It is unlikely that the options 4 and 5 would benefit from this option or any meaningful input form a sustainable energy process to significantly reducing the buildings ‘carbon footprint’

When considering any level of value for money when looking at the complexity of the build process suggest that options 2 and 3 are the obvious choices.