

Phase 1 a + b



Phase 1 c



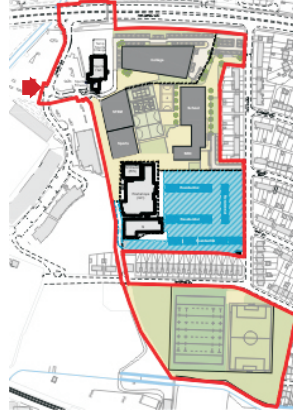
Phase 1 d + e



Phase 2 a



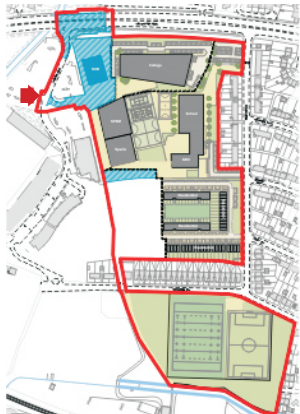
Phase 2 b



Phase 2c + d



Phase 3 a










Phase 3 b + c



Completion



Legend

-  Existing Buildings
-  Buildings to be Demolished
-  Buildings Under Construction
-  New Buildings
-  Construction Area
-  Construction Hoarding
-  Construction Vehicle Access



Not to scale

Note: All locations are approximate
Contains OS data © Crown Copyright 2015

Project Title:
Richmond Education and
Enterprise Campus
Development

Figure Title:
Illustrative Construction
Phasing Plans

For Information Only

Figure Number:
Figure 7

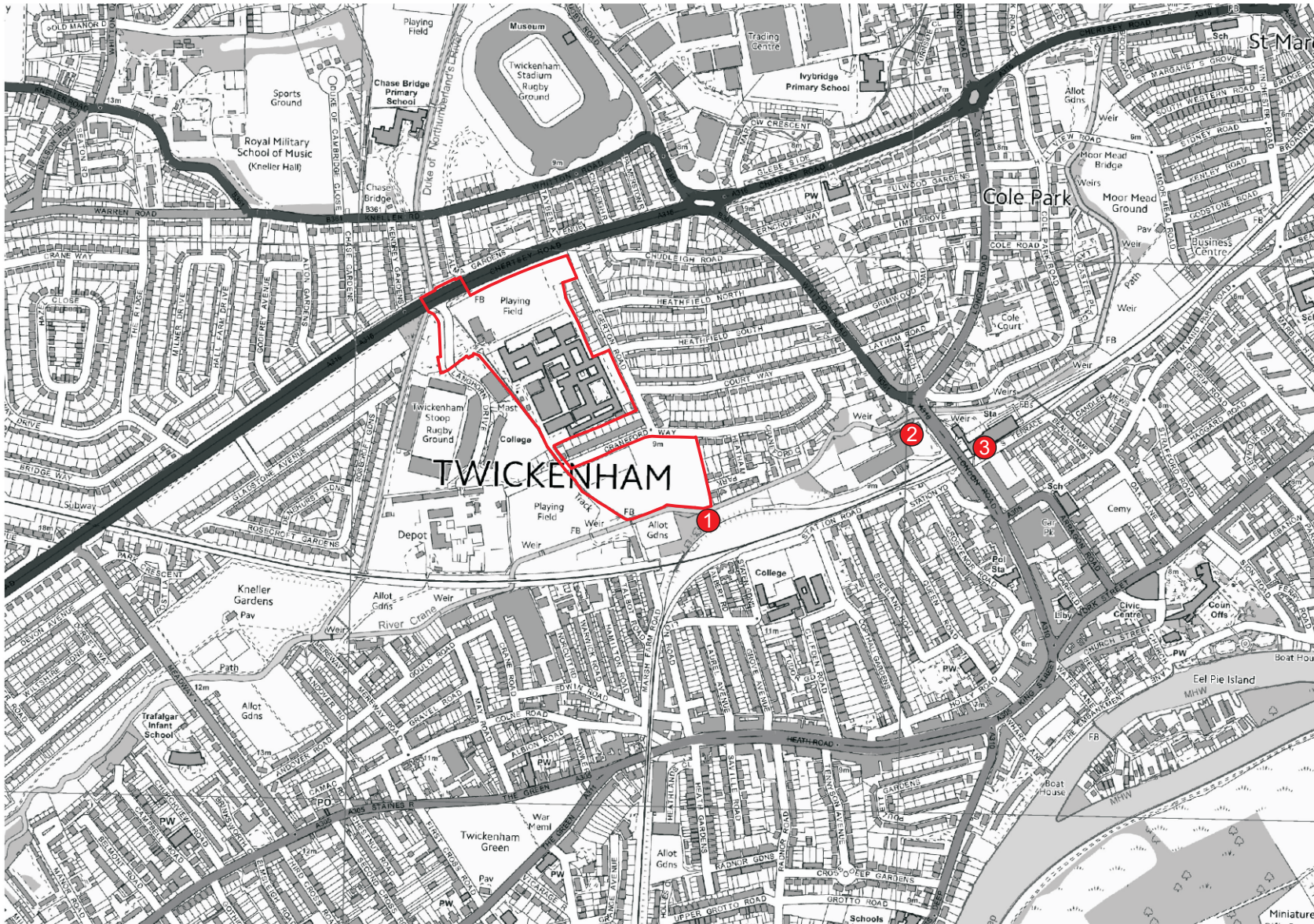
Date:
June 2015

Cumulative Developments

1.4.9 Other developments near the Richmond Enterprise and Education Campus Site which are planned or ongoing on the same timescale could result in a combination of effects that is greater than the impacts from the Richmond Enterprise and Education Campus development alone. These effects are known as cumulative effects and the developments are referred to as cumulative developments. Committed and known planned developments agreed with London Borough of Richmond upon Thames through the Environmental Impact Assessment scoping process, that have been assessed for cumulative effects with the Richmond Enterprise and Education Campus development include:

- Twickenham Railway Station London Road Twickenham (Planning application 10/3465/FUL);
- Former Twickenham Postal Sorting Office London Road, Twickenham (Planning application 12/3650/FUL); and
- Land Known as Twickenham Rough - Open Land West of Twickenham Sorting Office Site (Planning application 13/1147/FUL).

1.4.10 The locations of these developments are shown on **Figure 8**.



Legend

- 1** Land Known as Twickenham Rough - Open Land West of Twickenham Sorting Office Site
- 2** Former Twickenham Postal Sorting Office London Road, Twickenham
- 3** Twickenham Railway Station London Road Twickenham



Note: All locations are approximate
Crown Copyright and Database Rights May 2015

Project Title:
Richmond Education and Enterprise Campus Development

Figure Title:
Cumulative Developments

For Information Only

Figure Number:
Figure 8

Date:
June 2015

- 1.4.11 LBRuT also requested that consideration be given to future redevelopment of the Harlequin Football Club and the Council Depot sites, as these are allocated for redevelopment in the Local Plan. However, there was insufficient information about how and when these sites might be redeveloped to undertake any meaningful cumulative assessment.

1.5 ALTERNATIVES

- 1.5.1 In Environmental Impact Assessment, the alternatives of no development or development on another site are often considered. However, these are not applicable in this case because local planning policies clearly identify the use of the Richmond on Thames College site for educational and enabling residential development, and the need for its redevelopment is well established.
- 1.5.2 The main alternatives that were studied for the Richmond Education and Enterprise Campus were therefore alternative layout designs. Original plans for the Site were developed in 2005 and the scheme design has evolved over the period 2005-2015, as shown in **Figure 9**, in response to the needs of the Borough and the occupiers, public consultation and environmental considerations.
- 1.5.3 The recent masterplanning and feasibility studies carried out in 2014 / 15 considered alternative access arrangements, height restrictions and the need to set the development back from the A316 to avoid noise and air quality issues. The need to keep the College open during the building work and how and when students could be moved from the existing to new buildings without disruption, as well as the possible construction phasing of the development, was also considered to understand how this would influence the resulting layout. Different densities of residential development and uses of different parts of the site were explored.
- 1.5.4 The different uses of the educational and commercial buildings were considered including shared buildings across the different curriculum ages and abilities (college, secondary and special educational needs schools), the use of a shared campus and layouts with more distinct areas separating the different educational and commercial elements.
- 1.5.5 Consideration of alternative aspects of the design by the Richmond Education and Enterprise Campus partnership in consultation with the London Borough of Richmond upon Thames, Greater London Authority, Sport England and other organisations, the Local Community Forum and the wider public has culminated in the illustrative layout presented in **Figure 4**.
- 1.5.6 This layout takes account of environmental considerations identified through consultation and the early stages of the Environmental Impact Assessment process. The design principles to avoid or reduce the development's environmental impact, known as "designed in" mitigation, are described below.



2005 - Masterplan



2009 - Masterplan



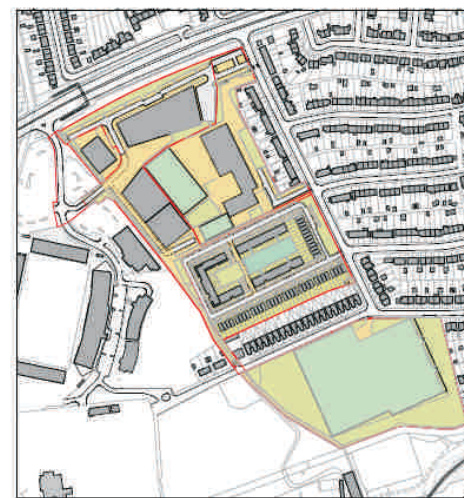
Late 2012 - Masterplan



2014 - Masterplan



Early 2015 - Masterplan



Spring 2015 - Masterplan



Not to scale

Note: All locations are approximate
Contains OS data © Crown Copyright 2015

Project Title:
Richmond Education and
Enterprise Campus
Development

Figure Title:
Design Evolution

For Information Only

Figure Number:
Figure 9

Date:
June 2015

1.6 ENVIRONMENTAL DESIGN PRINCIPLES

1.6.1 The design principles for the Richmond Education and Enterprise Campus are set out fully in the Design Code accompanying the Outline Planning Application. The key design principles relating to environmental considerations include:

- Provision of access to the College, Tech Hub and residential development via Langhorn Drive, through a junction amendment, in order to reduce potential impacts on the Heatham Estate to the east of the Site.
- Providing an important benefit to the wider community through improvements and widening of the existing pedestrian and cycle route along Marsh Farm Lane. Encouraging walking and cycling as key transport modes to reduce transport impacts.
- Setting the development back from the A316 to avoid air quality and noise issues, with non-sensitive uses such as car parking along the northern boundary. Setting car parking back to avoid root zones of the mature trees along the A316.
- Designing buildings to create visual interest and local landmarks, such as the College buildings when viewed from the A316 and from Marsh Farm Lane.
- Reducing the apparent scale and mass of large blocks through careful design of the elevations and roofscape to reduce their townscape and visual impact.
- Designing buildings with attention to their materials, colour and prominence to reduce impacts on views, particularly from Richmond Hill and Rosecroft Gardens.
- Phasing the development to allow the College to continue to operate throughout and to constrain construction impacts to parts of the Site at a time. Undertaking demolition from the middle outwards to reduce impacts on people and the environment outside the Site.
- Retaining and enhancing valuable habitats as far as possible, for example by providing additional tree planting to strengthen the retained trees along the A316 boundary, Marsh Farm Lane, and habitat areas along the River Crane.
- Ensuring the residential development is 'self-sufficient' in terms of open space and amenity areas by providing these in line with policy requirements, to minimise pressure on existing open space areas.
- Siting sports pitches on the College playing fields south of Craneford Way to protect habitat used by bats and to leave a buffer area for future naturalisation of the river banks (by others).
- Provision of a contribution to support the Environment Agency's restoration programme for the River Crane river corridor, which is likely to include naturalisation of the river banks.
- Floodlighting to be prohibited on sports pitches on the College playing fields and lighting on the main site to be designed to avoid glare and minimise spillage outside the areas to be lit.

- Providing a new pedestrian access to the eastern side of the College playing fields to allow a circular walk around the perimeter.
 - Development of an outline Sustainable Drainage Strategy which retains surface water runoff on site and disposes of it through soakaways, to reduce surface water drainage and flood risk to neighbouring properties.
 - Designing the residential development in accordance with the Lifetime Homes Standards included within the London Housing Design Guide and the London Design Guide's requirements for climate change mitigation and adaptation.
 - Providing use of facilities, including the sports centre and pitches on the main site and on the College playing fields, and other facilities within the College and Schools, for the wider community.
- 1.6.2 The development, as defined by the Primary Control Documents described in paragraph 1.4.4, has been subject to Environmental Impact Assessment to identify any significant environmental effects. These are summarised in the next section.

2 DESCRIPTION OF ENVIRONMENTAL EFFECTS

2.1 INTRODUCTION

2.1.1 This section of this Non-Technical Summary explains the outcome of the Environmental Impact Assessment of the Richmond Enterprise and Education Campus development. The Environmental Impact Assessment process considers only potentially significant environmental effects, as those are most likely to be a factor in the decision on whether to grant planning permission for the development. These are any significant environmental effects which the development would have, compared to those which the existing site has now, or compared against standards (such as for air quality).

2.1.2 The following sections describe the impacts of the development during construction and operation and the effects on each environmental topic listed in **Table 1** above. They identify any measures needed to avoid, reduce, remedy or compensate for impacts, and the environmental effects that are likely to remain (known as residual effects) after such mitigation has been applied.

2.1.3 As explained in paragraph 1.2.6, the assessments represent a 'worst case' scenario and are based on the Parameter Plans submitted as part of the Outline Planning Application or, where appropriate, on the Illustrative Masterplan.

2.2 TRANSPORT

2.2.1 A number of local roads have been identified as key access points or routes to the Richmond Enterprise and Education Campus development, and the likely effects of use by pedestrians, cyclists and motor vehicle have been assessed. These roads are:

- A316 Chertsey Road;
- Langhorn Drive;
- B361 Whitton Road;
- Court Way;
- Heathfield North;
- Heathfield South;
- Egerton Road; and
- Craneford Way.

2.2.2 Traffic surveys on local roads when Harlequin Football Club were playing a home match at Twickenham Stoop, and parking surveys within walking distance of the Site were carried out to inform the transport assessment.

2.2.3 Local bus stops and Twickenham Rail Station have been identified as key public transport nodes. The likely effects by users of the Richmond Enterprise and Education Campus development have been assessed with regard to routing from each

of these nodes to the Site, and on the capacity of the buses and rail services which serve them.

- 2.2.4 Construction traffic will enter the Site via Langhorn Drive and will as far as possible use the Transport for London Road Network, which includes the A316 Chertsey Road, to travel to the site. For the development of the College playing fields south of Craneford Way, construction traffic will cross Craneford Way from the existing college access in order to access the playing field.

Effects During Demolition, Construction and Operation

- 2.2.5 The construction and operation of the Richmond Enterprise and Education Campus development, in combination with other on going developments (see **Figure 7**), will result in an increase in pedestrian, cycle, bus, rail and motorised vehicle trips when compared with the existing situation. However, a number of measures are being brought forward as part of the development (including contribution by third parties) which will mitigate the increase in such trips. The main measures include:
- The new A316 Chertsey Road / Langhorn Drive signal controlled junction, which will mean the only vehicles using the Heatham Estate will be cars associated with the Special Educational Needs School and some of the cars dropping off and picking up Secondary School students. All other vehicles associated with the Richmond Enterprise and Education Campus development, including heavy goods vehicles, will access the site via Langhorn Drive.
 - The upgraded Marsh Farm Lane and Twickenham Rough cycle / footpaths, which will mean that pedestrian and cycle trips associated with the College, residential site and Tech Hub have the option of a potentially more direct and desirable route to Twickenham Station and the bus stops near to it, and also Twickenham town centre.
 - Frequency improvements to the bus network to cope with the increased demand produced by the Richmond Enterprise and Education Campus development.
- 2.2.6 These proposed mitigation measures, together with those implemented through an outline Construction Logistics Plan, outline Construction Environmental Management Plan and Framework Travel Plan, will mean that the overall effect of the Richmond Enterprise and Education Campus development on the local transport network and the environmental capacity of local streets is likely to be negligible.
- 2.2.7 Measures set out for on-street parking will maintain the negligible effect of parking demand on local roads. The increase of the development and cumulative development trips on the public transport network will be negligible.
- 2.2.8 Overall, the proposed Richmond Enterprise and Education Campus development, with mitigation measures applied, will not have a significant adverse effect on the local transport network.

Cumulative Effects

- 2.2.9 Cumulative effects from other developments were taken into account in the transport assessment, as described above, but are not predicted to result in significant adverse effects.

2.3 NOISE AND VIBRATION

- 2.3.1 The Richmond Education and Enterprise Campus development is located within a mainly urban area, with existing residential properties on three boundaries of the Site that could be affected by changes in noise levels resulting from the development. A survey of ambient noise levels was carried out from which the effects of any changes of noise could be determined. The noise assessment considered people working and studying within the Outline Planning Application Site as well as nearby residential receptors.

Effects During Demolition and Construction

- 2.3.2 The effects are likely to be mostly associated with the construction phase, including noise generated by demolition, piling (if required), earth movements and general construction activities. The assessment found that that, after mitigation, moderate adverse effects are likely to occur at properties near the eastern and southern Site boundaries during the demolition and earthworks of Phases 2 and 3 (see **Figure 7**). The same effects are likely to occur at properties on the eastern boundary during the demolition and earthworks of Phase 1. At other locations outside the Site, construction noise is likely to be negligible. The noise assessment also found the effects of construction vibration and construction traffic to be negligible.
- 2.3.3 Following completion of Phase 1, the new college and school buildings will be occupied and students and staff are likely to be affected by construction noise arising from the subsequent demolition and earthworks activity during the demolition of the remaining existing college buildings. These buildings are also likely to be affected, to a lesser extent, by activities during the construction of the Sports Centre and pitches and the STEM Centre, as well as during the initial stages of the residential construction. Construction areas will be surrounded by site hoardings which will provide noise attenuation at ground and first floor levels but will not be effective at higher floors.

Effects During Operation

- 2.3.4 The completed development would be designed to ensure that the effects of noise from traffic on the A316 and noise from aircraft would be of negligible significance to users of the new buildings. Following mitigation, the effects of noise from fixed plant and noise from changes due to traffic generation would be negligible. Noise from sports activities on the new pitches on the College playing fields south of Craneford Way could be mitigated by a noise barrier, subject to consultation with local

residents, which would result in minor adverse to negligible residual effect.

Cumulative Effects

- 2.3.5 No cumulative effects relating to noise or vibration were identified during the noise assessment.

2.4 AIR QUALITY

- 2.4.1 A detailed assessment of the potential impact of the Richmond Education and Enterprise Campus development on local air quality was undertaken. The Site is situated within an Air Quality Management Area due to measured exceedences of the standards set by the UK Government and the EU for nitrogen dioxide. Nitrogen dioxide is the primary pollutant arising from road traffic and routine monitoring of concentrations is carried out at a number of locations in the London Borough of Richmond upon Thames. The data indicate that elevated levels occur close to congested roads in the area, including the A316 Chertsey Road.
- 2.4.2 The other pollutant which is commonly of concern, particularly with regard to possible respiratory effects, is particulate matter. However, monitoring in the Borough shows that existing particulate levels are well within Government and EU standards.

Effects During Demolition and Construction

- 2.4.3 Dust will be generated during the construction phase, which has the potential to cause dust soiling nuisance and temporarily raise airborne particulate levels at locations close to the Site boundary. However, measures will be implemented on-site through a Construction Environmental Management Plan, such as dampening down of loose material and the erection of solid barriers to minimise any potential soiling effects. Due to the existing low levels of particulate matter in the air, dust generated on Site is unlikely to affect the health of people living close to the Site or sensitive ecological habitats.

Effects During Operation

- 2.4.4 The Richmond Education and Enterprise Campus development will result in additional traffic on the local road network and a small increase in levels of pollutants at locations close to the A316. However, overall future air quality is predicted to improve significantly as the number of low-emission vehicles on the road increases. The pollutant levels following the completion of the Richmond Education and Enterprise Campus development are predicted to be lower than existing levels.

Cumulative Effects

- 2.4.5 Given the distance from the developments included in the cumulative assessment the risk of cumulative impacts relating to dust at locations between the sites is considered

to be very low. Traffic resulting from the cumulative developments was already incorporated into the assessment of traffic effects on air quality.

2.5 GROUND CONDITIONS

- 2.5.1 The assessment of potential impacts of contaminated land was based on soil and chemical testing data together with a contaminated land data search, desk study and walkover survey of the Site.

Effects During Demolition and Construction

- 2.5.2 The assessment found that the College, Schools and Tech Hub development zones contain contaminants below safe levels for development. However, safe levels for contaminants are exceeded at some locations within made ground in the residential development zone.
- 2.5.3 This contamination could pose a risk to human health and will require mitigation. Mitigation will take the form of further site investigation and soil testing to characterise the nature and extent of contamination followed by excavation and removal of contaminated soil for treatment off-site for all garden areas within the residential development zone. The excavated material will be replaced with clean sub-soil and topsoil.
- 2.5.4 The potential impacts of soil contamination prior to any mitigation are rated minor to moderate adverse, but with mitigation in place the residual effects will be negligible. When construction is completed, minor to moderate beneficial effects will ensue in the residential development zone because levels of contaminants or exposure to them will have been reduced as a result of the works.
- 2.5.5 Levels of contaminants in groundwater are below safe levels and therefore, potential effects of groundwater contamination at the site are negligible.
- 2.5.6 The potential effects of carbon dioxide gas in the ground on human health are rated moderate adverse. However, after mitigation, which would involve incorporation of gas barriers into the floor slabs of any sensitive structures, the residual effects will be negligible.
- 2.5.7 Ground instability hazards would be mitigated through design and the residual effects will be negligible.

Effects During Operation

- 2.5.8 There are not expected to be any significant effects of contaminated land or ground conditions during the operational phase of the Richmond Education and Enterprise Campus development. This is because there will be no new sources of contaminants nor any significant changes to the Site that would affect the potential impacts of

residual contaminants on site, and all mitigation measures will be complete by the end of the construction phase or will have been incorporated into the design of the Richmond Education and Enterprise Campus development

Cumulative Effects

- 2.5.9 There are no additional plans or projects which are likely to have cumulative effects with the contaminated land aspects of the Richmond Education and Enterprise Campus development. The contaminated land desk study and geo-environmental constraints reports searched for contaminated land data in a buffer zone of 500m from the Site and found nothing of significance that would have any cumulative effects.

2.6 WASTE

- 2.6.1 The potential impacts of waste have been assessed by estimating quantities of different types of waste for both construction and operational phases of the development and comparing these quantities with the total quantities of such wastes managed within the West London Waste Authority area on an annual basis.

Effects During Demolition and Construction

- 2.6.2 The assessment has shown that the likely direct environmental effects of waste will be negligible for all waste streams, i.e. demolition and excavation waste, construction waste, operational waste from the proposed residential development and operational waste from the new Schools, STEM and Tech Hub.
- 2.6.3 The amount of waste from the new College and Sports Centre developments will not change significantly compared to the current situation because these developments will replace existing college and sports centre facilities.
- 2.6.4 Wastes will be managed in accordance with the Construction Environmental Management Plan, Site Waste Management Plan and London Borough of Richmond upon Thames Supplementary Planning Guidance, as appropriate.

Effects During Operation

- 2.6.5 The effects of the waste arising from the completed residential development and from the other elements of the development are considered to be negligible.

Cumulative Effects

- 2.6.6 There are no other nearby developments involving waste generation on a similar scale to the Richmond Education and Enterprise Campus development that could lead to direct cumulative effects during either the construction or operational phases of the development.

2.7 WATER RESOURCES AND FLOOD RISK

- 2.7.1 The Richmond Education and Enterprise Campus development is located between the River Crane to the south and the Duke of Northumberland's River to the west, and lies over sands and gravels which contain groundwater classified as a principal aquifer. The Site is located within an area with low flood risk, with the exception of the southern part of the College playing fields south of Craneford Way, where the flood risk is medium. Most of the surface water runoff on the site appears to go to soakaways, although there appears to be a gravity connection to a combined Thames Water sewer serving the eastern portion of the Site. The existing College foul drainage discharges to the Thames Water public infrastructure system to the west of the Site.

Effects during Demolition and Construction

- 2.7.2 The effects on the water environment during the demolition and construction phase could include damage to or disruption of the existing surface water, foul drainage or supply network; interruption to shallow groundwater flow; and changes in surface water runoff leading to flooding and pollutant transfer to groundwater, the River Crane or the Duke of Northumberland's River. The assessment has shown that after implementing a sustainable drainage system (SuDS) for the various construction phases, and mitigation measures in the site-wide outline Construction Environmental Management Plan, the residual effects will not be significant.

Effects During Operation

- 2.7.3 The completed development would be designed with a sustainable drainage system based on the use of green roofs, permeable pavements and soakaways to capture and store rainfall and surface runoff from the Site. This will ensure that the effects of the development on water resources and flood risk to people, property and the environment are negligible.
- 2.7.4 The development will be designed with water efficient fixtures and fittings and is likely to use measures such as rainwater harvesting to reduce its demand for water. However, the increased population from the schools, Tech Hub and residential development will result in an increased demand for water and wastewater disposal, which could potentially cause reduced pressure in Thames Water's water mains and sewer flooding in combined sewers. If Thames Water confirm that capacity is an issue, either additional network infrastructure can be provided or alternatively additional storage can be provided within the development to accommodate the peak demand for water and peak wastewater flows. This would mean that water demand and peak wastewater flows would be no greater than existing, so there would be no significant effects on the water supply and foul drainage systems.

Cumulative Effects

- 2.7.5 No significant cumulative effects relating to surface water runoff, foul water drainage, groundwater, water quality or flood risk were identified during the water resources and flood risk assessment.

2.8 DAYLIGHT, SUNLIGHT AND OVERSHADOWING

- 2.8.1 The daylight, sunlight and shadow assessment considered the Richmond Education and Enterprise Campus development's effects on properties on Craneford Way, Egerton Road, Heathfield South and the Challenge Court residential complex, and neighbouring gardens / amenity spaces. The assessment also considered the natural light conditions that will be experienced in the residential development zone and the shadow conditions within the development's gardens and open spaces.
- 2.8.2 The assessment was undertaken in accordance with the Building Research Establishment report "*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*".
- 2.8.3 The assessment showed that most neighbouring properties currently receive daylight and sunlight levels above the guide levels, though some experience conditions below the guide levels.

Effects During Demolition and Construction

- 2.8.4 There are unlikely to be any significant daylight and sunlight effects on neighbouring properties during the phased construction process.

Effects During Operation

- 2.8.5 The development will comply fully with the Building Research Establishment guidance for ambient daylight, annual sunlight and overshadowing, and will achieve a high level of compliance with the guidance for winter sunlight.
- 2.8.6 The assessment concludes that the development will not cause any significant environmental effects in terms of daylight, sunlight and overshadowing in the context of the Building Research Establishment guidance and relevant planning policy.

Cumulative Effects

- 2.8.7 There are no emerging developments in the immediate vicinity of the site that could give rise to cumulative effects or interactions in terms of daylight, sunlight and shadow effects. The cumulative developments identified in Section 1.4 are a sufficient distance from the site to ensure there are no interactions or cumulative effects arising.

2.9 ECOLOGY

2.9.1 The ecology and nature conservation interest of the development site and its surrounds was initially scoped through consultation and habitat survey to identify notable habitats, including those formally designated for nature conservation. The habitats' potential for protected or otherwise notable species of plants and animals was also recorded. Further surveys for a number of protected and notable species were subsequently undertaken and included bats, birds, and invertebrates. These surveys, taken together, provide the baseline against which potential ecological impacts arising from the Richmond Education and Enterprise Campus development have been assessed.

2.9.2 Generally, the habitats within the site are of limited ecological value, most being of no more than local importance for nature conservation and supporting relatively common species. Some habitats on the periphery of the site and immediately beyond are of greater value; these include notable river habitats and areas of semi-natural vegetation, some of which are supported by non-statutory local designations.

Effects During Demolition and Construction

2.9.3 Demolition, site clearance and construction has potential to cause direct impacts to non-designated habitats within the site boundary. These include habitat loss, habitat damage, and habitat fragmentation. The development's landscaping proposals will include measures to replace lost habitat features such as trees. Habitat damage on site will be reduced by protecting any retained features such as trees and their roots.

2.9.4 Damage and disturbance to off-site habitats, including designated sites, which are of greater value, will be avoided through adherence to construction industry good-practice guidance on pollution prevention and dust containment, and measures to avoid encroachment into sensitive habitats such as site demarcation and briefings. These will be implemented through the site-wide outline Construction Environmental Management Plan. Contributions will also be made to existing initiatives to enhance locally important habitats such as the local river corridors.

2.9.5 Potential injury or mortality of protected and notable species through site clearance and construction activity will be avoided through careful seasonal timing of works and pre-clearance habitat checks. Disturbance to species in retained habitat within and adjacent to the site will be reduced through industry good-practice measures for reduction and containment of lighting and noise. A minor reduction in bat foraging habitat in the local area will occur. The development includes measures to enhance the available nesting and roosting habitat for important species groups such as birds, bats and invertebrates through extensive tree planting, hedgerows, bird and bat boxes, and dead-wood habitat features such as a 'loggery' for stag beetles.

Effects During Operation

- 2.9.6 The only significant post-construction, operational impact on notable species is from increased artificial lighting at night in previously unlit or dimly-lit areas of habitat. The night-time commuting and foraging activity of bats may be affected and bird breeding activity may also be impacted. However these effects will be avoided or reduced through the use of industry good-practice techniques to limit light-spill into adjacent habitat areas.
- 2.9.7 Increased use by students and residents of footpaths adjacent to sensitive habitats, including the river corridors and designated habitats, could result in increased trampling and litter. However, this is not considered likely to have a significant adverse effect on the integrity of these sites or species associated with them. The conservation of these sites could be enhanced by the College and schools supporting local programmes of nature education and community involvement in practical conservation.

Cumulative Effects

- 2.9.8 No significant cumulative effects relating to construction impacts (noise or air quality) or increased recreational pressure following completion of the development were identified during the ecology assessment.

2.10 TOWNSCAPE AND VISUAL AMENITY

- 2.10.1 The townscape and visual amenity assessment considered the potential for significant effects from the Richmond Education and Enterprise Campus development on townscape character, views and visual amenity. An analysis of the townscape was undertaken to identify areas of consistent character, the value of the townscape of each area and the aspects that contribute to their value. The site lies within two character areas (Langhorn Drive and the Crane Corridor Local Character Areas) and adjacent to three further character areas (Chertsey Road North, Chertsey Road South and Rosecroft Gardens) which lie within the wider Whitton and Heathfield Borough Character Area, identified by the Council in its Design Quality Supplementary Planning Document.
- 2.10.2 Langhorn Drive is a distinct area of varied non-residential land-uses on the south side of the A316 including buildings of larger mass than the surrounding residential area. It currently has low townscape value. Elements that are sensitive to change in this area include the trees along Chertsey Road and Marsh Farm Lane, the open space to the west of the site and building of townscape merit within the Council depot site. The Crane Corridor is an area of medium townscape value along the River Crane that provides a contrast with the densely developed surroundings and where recreational use predominates. Its sense of openness was identified as being potentially sensitive to townscape impacts.

- 2.10.3 People within the surrounding area who would experience changes to their visual amenity as a result of the development have also been identified. This includes people in surrounding properties with an outlook over the Site, people using local roads, footpaths / cycleways and public open spaces. An evaluation of their sensitivity to visual change was made based on current good practice guidance. Consideration has also been given to the potential for change to the protected view from the Terrace on Richmond Hill.

Effects During Demolition and Construction

- 2.10.4 The assessment has found that there would be a moderate adverse visual effect on residents immediately adjoining the Site, and with an extensive outlook over it, during the construction period which could be mitigated by the use of hoardings and the sensitive siting of contractors' compounds and welfare facilities. There would also be a moderate adverse effect arising from the removal of trees along Marsh Farm Lane. However, replacement planting and widening of the route has been incorporated as part of the proposals to mitigate this.

Effects During Operation

- 2.10.5 The Outline Planning Application proposals include a number of commitments, set out in the Design Code, which will ensure that there are no harmful townscape or visual effects. With these commitments and the good quality design of the buildings taken into account, there would be a moderate beneficial change to the townscape character of the Langhorn Drive and the Crane Corridor and Chertsey Road Local Character Areas and to the wider Whitton and Heathfield Borough Character Area. There would be an enhancement of the connections across the Site and to the wider area, an improvement in the appearance of the Site frontage to Chertsey Road and an improvement in the legibility of the area as a result of the greater prominence of the College.
- 2.10.6 There would be no remaining significant adverse effects on the visual amenity of people in the surrounding area following the development. Notable improvements would be experienced by users of Marsh Farm Lane, the footpath / cycleway along the A316, the open space to the west / south-west of the Site.
- 2.10.7 The change to the long range view from Richmond Hill would be negligible.

Cumulative Effects

- 2.10.8 No significant cumulative townscape or visual effects were identified during assessment of the construction of the Richmond Education and Enterprise Campus development, due primarily to the distance between the developments.
- 2.10.9 The Sorting Office redevelopment and the Twickenham Station redevelopment would not be seen in conjunction with the completed Richmond Education and Enterprise

Campus development other than in the long range view from Richmond Hill to the east. There would be no significant cumulative townscape or visual effect arising from the Richmond Education and Enterprise Campus development in combination with the Sorting Office and Twickenham Station developments.

2.11 CULTURAL HERITAGE

- 2.11.1 The cultural heritage resource of the Site and a study area within a 1km radius from its centre was assessed. This established that the Site is located on a gravel terrace approximately 790m to the north west of the River Thames and contains no designated nor any undesignated heritage assets. The southern third of the Site extends into the Crane Valley Archaeological Priority Area. The wider study area contains 27 listed buildings and Conservation Areas and three further Archaeological Priority Areas. No evidence of early prehistoric activity was identified within the study area although Neolithic, Bronze Age and Iron Age assets have been recorded. Evidence was also recorded of Roman and early medieval activity within the study area. In the later and post-medieval period the study area appears to have been covered by either heathland or open field systems to the north west of the settlement of Twickenham.
- 2.11.2 From the 18th century onwards the gunpowder industry developed along the Thames, elements of which may survive within the southern third of the Site. In the early 20th century the area was developed for housing and then later in the century Richmond College was constructed in the centre of the Site with playing fields to both the north and south. Air raid shelters may have been constructed in the north east corner of the Site during the Second World War.

Effects During Demolition and Construction

- 2.11.3 The construction of the Richmond Education and Enterprise Campus buildings is likely to have a high impact upon any as yet unrecorded archaeological features in the northern third of the Site. This part of the Site appears to have been relatively undisturbed through recorded history and is considered to be of low to medium archaeological potential. The high impact of the development in this area is likely to result in a minor significant effect on any deposits, depending on their value. The creation of a new all-weather sports pitch in the southern third of the Site is likely to have a low impact upon an area of medium archaeological potential that is located within the Crane Valley Archaeological Priority Area, leading to a minor adverse effect.

Effects During Operation

- 2.11.4 No significant effects on cultural heritage are anticipated during operation.

Cumulative Effects

- 2.11.5 No cumulative effects relating to cultural heritage were identified.

2.12 SOCIO-ECONOMICS

- 2.12.1 The socio-economic assessment considered the potential socio-economic effects of the Richmond Education and Enterprise Campus development relating to the population structure, employment levels, housing stock, education provision, availability of local services and facilities as well as open-space and recreation space in the local area.
- 2.12.2 London Borough of Richmond upon Thames' economy performs well; generally, residents are well qualified, high earners who occupy top occupations and unemployment levels are low. The Borough is relatively prosperous. House prices in the London Borough of Richmond upon Thames are high and relatively unaffordable compared to the rest of London and England as a whole. The Twickenham area has a good range of local services and facilities, however, the majority of education facilities, particularly at primary level are operating at capacity. The London Borough of Richmond upon Thames has more open-space than any other London Borough and most parts of the Borough have good access to sport and recreation facilities.

Effects During Demolition and Construction

- 2.12.3 The development will have a beneficial effect on the local economy by providing high levels of investment (over £100 million) and creating 112 new full time construction jobs as well as supporting 87 full time supply-chain jobs.
- 2.12.4 The construction phase may result in some localised disruption however; this will be managed through effective development programming.

Effects During Operation

- 2.12.5 The development will meet local housing needs by providing 180 homes of which 15% will be affordable. Richmond Education and Enterprise Campus will improve further education provision through the upgrading of Richmond upon Thames College, increase the Borough's secondary school capacity by approximately 8%, provide high quality Special Educational Needs facilities, provide an upgraded playing pitch as well as a 3G all-weather sports facility to meet identified need. The new facilities will also support 460 full time jobs.
- 2.12.6 The population arising from the residential development will place more demand on existing education provision (early-years and primary schools), health facilities, Metropolitan Open Land and open-space, recreation facilities and community facilities and services that could lead to some adverse effects. Mitigation measures

have been identified to reduce or compensate some of these effects, including a contribution towards the restoration of the River Crane to improve the river corridor and associated open space.

- 2.12.7 On balance, overall from a socio-economic perspective the proposed development is assessed as having a moderate beneficial effect.

Cumulative Effects

- 2.12.8 In terms of the construction phase, it is recognised that adverse cumulative socio-economic effects could arise if all of the proposed developments were to all come forward at once, as the availability of labour could be constrained. However, it is considered unlikely that this situation would arise. The Sorting Office development is currently under construction and is likely to be complete prior to the commencement of the Richmond Education and Enterprise Campus development. The developments are at different stages of the development process, have varying lead-in times and are expected to come forward on a phased basis. As such, the demand for labour and specific skills is likely to be distributed over a number of years as individual schemes are built out. Furthermore, national construction firms often use their own, permanent workforce on projects supported by local contractors, meaning that availability of local labour would not necessarily act as a constraint to delivery of projects. The effects at the construction phase are therefore, not considered significant.
- 2.12.9 The cumulative increase in demand for education, healthcare, open-space, sport and recreation and community facilities arising from the completed developments could still be predominantly accommodated by the current and proposed provision in the local area. The exception will be early years / childcare and primary education provision developments, where increased demand will increase the significance of the effects from minor neutral to moderate adverse. Demand on open space may increase, despite provision of amenity space within the new developments, but is considered to remain a minor adverse effect.

3 CONCLUSIONS

- 3.1.1 The assessment has followed the process required by the Environmental Impact Assessment Regulations and assessed likely significant environmental impacts. This section summarises the major, moderate and minor residual effects after mitigation has been applied. No major adverse residual effects are predicted to arise from the construction or operation of the Richmond Education and Enterprise Campus development.

Effects During Demolition and Construction

- 3.1.2 The assessment concluded that the demolition and construction works will result in short term, moderate adverse noise effects on residents at properties near the eastern and southern Site boundaries. Once the new college and school buildings are occupied, there are also likely to be moderate adverse noise effects during construction of the residential development, specifically that experienced by students and staff occupying the higher floors of the college and school buildings. At these higher levels, noise attenuation such as site hoardings will not be able to fully mitigate the noise effects during the construction of the residential development.
- 3.1.3 This phase of construction will also result in moderate adverse air quality effects on properties in close proximity to the A316 Chertsey Road due to increased vehicle emissions (nitrogen dioxide concentrations). These effects occur during the construction phase and will be temporary.
- 3.1.4 The construction of the Richmond Education and Enterprise Campus development is predicted to have a moderate beneficial effect on local employment. Controlled removal of any asbestos and remediation of small areas of contaminated land during the demolition and construction phase will also have a beneficial effect.
- 3.1.5 Minor adverse effects are predicted during the construction phase on townscape and visual amenity, including views from residential properties with an immediate outlook over the development Site, and on the views from and the setting of Rosecroft Gardens Conservation Area. There will also be minor adverse effects on ecology, primarily from the loss of trees where bats forage for food. Additional tree planting, including native species, and habitat enhancement measures will in the longer term result in minor beneficial effects on ecology.

Effects During Operation

- 3.1.6 During operation, the Richmond Education and Enterprise Campus development will initially have a moderate adverse effect on air quality resulting from vehicle emissions (nitrogen dioxide concentrations) but this is predicted to improve over time as the number of low-emission vehicles on the road increases, and will be negligible 15 years after completion of the development.

- 3.1.7 The development will have a permanent, major beneficial effect on education provision and a moderate beneficial effect on sport and recreation. Minor to moderate beneficial effects on local housing and the local economy are also predicted. There will be permanent moderate beneficial townscape effects on Marsh Farm Lane and the open space to the west/south west of the Site, and on the townscape character of Langhorn Drive Local Character Area and Whitton and Heathfield Borough Character Area. The development will also have a moderate beneficial effect on views from a number of locations including west along Chertsey Road and for users of Marsh Farm Lane.
- 3.1.8 Minor adverse effects on residents are predicted from noise from the sports pitches on the College playing fields, marginally reduced winter sunlight levels at two neighbouring properties, changes in views from Challenge Court and the west side of Egerton Road, and changes in open-space provision.
- 3.1.9 Minor beneficial effects on views and visual amenity are predicted for pedestrians within adjoining residential areas and residents along the north side of Craneford Way. The development will also have minor beneficial townscape effects on several Local Character Areas.