

TATE



Transforming Tate Modern  
**Environmental  
Statement:  
Non Technical  
Summary**

Planning Application submitted  
by the Board of Trustees of  
the Tate Gallery

**January 2009**

# Environmental Statement: Non Technical Summary

Prepared by  
URS

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# Transforming Tate Modern Non-Technical Summary

## The Application

The Board of Trustees of the Tate Gallery (hereafter referred to as 'the Applicant') is seeking planning permission for expansion of the existing Tate Modern building (known as Tate Modern 1 (TM1)) to provide 24,786 square metres (m<sup>2</sup>) gross external area (GEA) of new accommodation.

This new space will include display and exhibition spaces, performance spaces, education and learning facilities, offices, catering, retail and associated support facilities. A new landscape treatment for the areas to the south, west and east of TM1 will provide a high quality public realm. Figure 1 illustrates the location of TM1 within the London Borough of Southwark (LBS), London, SE1.

The proposals for Transforming Tate Modern (TTM) (hereinafter referred to as 'the Development') will be located within the existing site plan of TM1. A new building, known as Tate Modern 2 (TM2), will be located at the southwest corner of TM1 and will border Holland Street and Sumner Street. TM2 will create a connection through to TM1 at levels 1, 2 and 5. Figure 2 details the existing site plan and identifies the Planning Application redline boundary.

The Environmental Impact Assessment (EIA) process aims to ensure that potential environmental, cultural and socio-economic impacts and benefits of the Development are taken into account when considering a planning application.

## The Environmental impact Assessment Process

URS Corporation Limited (URS) has been commissioned by the Applicant to undertake an EIA in accordance with the Town and Country (Environmental Impact Assessment) (England and Wales) Regulations 1999 (as amended to 2008).

An EIA provides a systematic analysis and presentation of information on the main environmental, cultural and socio-economic issues relating to the Development.

Environmental, cultural and socio-economic impacts have been studied systematically through the EIA process, the results of which are presented in their entirety within the Environmental Statement (ES) and accompanying Technical Appendices. The ES describes the potential environmental, cultural and socio-economic impacts of the Development during:

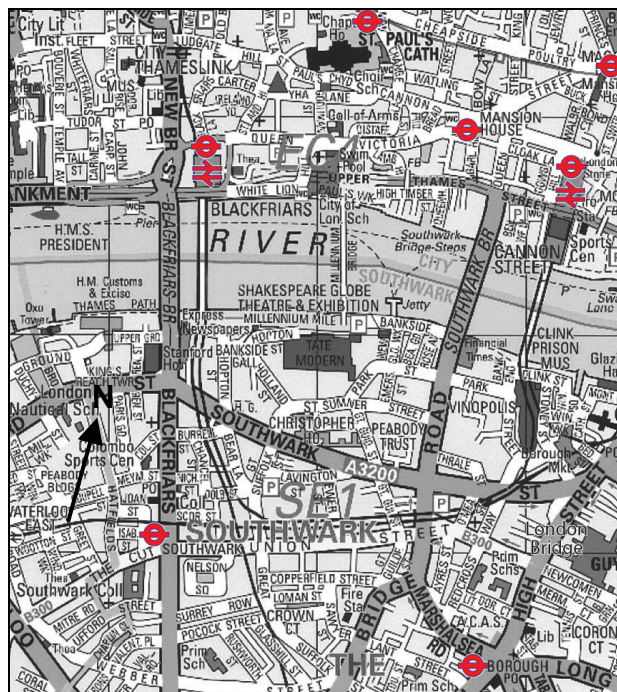
- Demolition and Construction; and
- Operation of the Development.

This document, the Non-Technical Summary (NTS), provides an overview of the findings of the EIA. The NTS has been prepared for a general audience including parties close to, or potentially affected by, the Development. A full assessment of all the environmental, cultural and socio-economic impacts associated with the Development is presented within the ES.

The ES has considered the likely impact of the Development on its neighbours, local environment, local and regional economy and wide area. Beneficial

and adverse, short and long-term (temporary and permanent), direct and indirect and cumulative impacts have been considered. Wherever possible mitigation measures to either eliminate, or reduce adverse impacts have been incorporated into the project design. The ES has also highlighted the remaining or 'residual' impacts, once appropriate mitigation measures have been applied.

Figure 1 – Site Location



Note: This map is not to scale

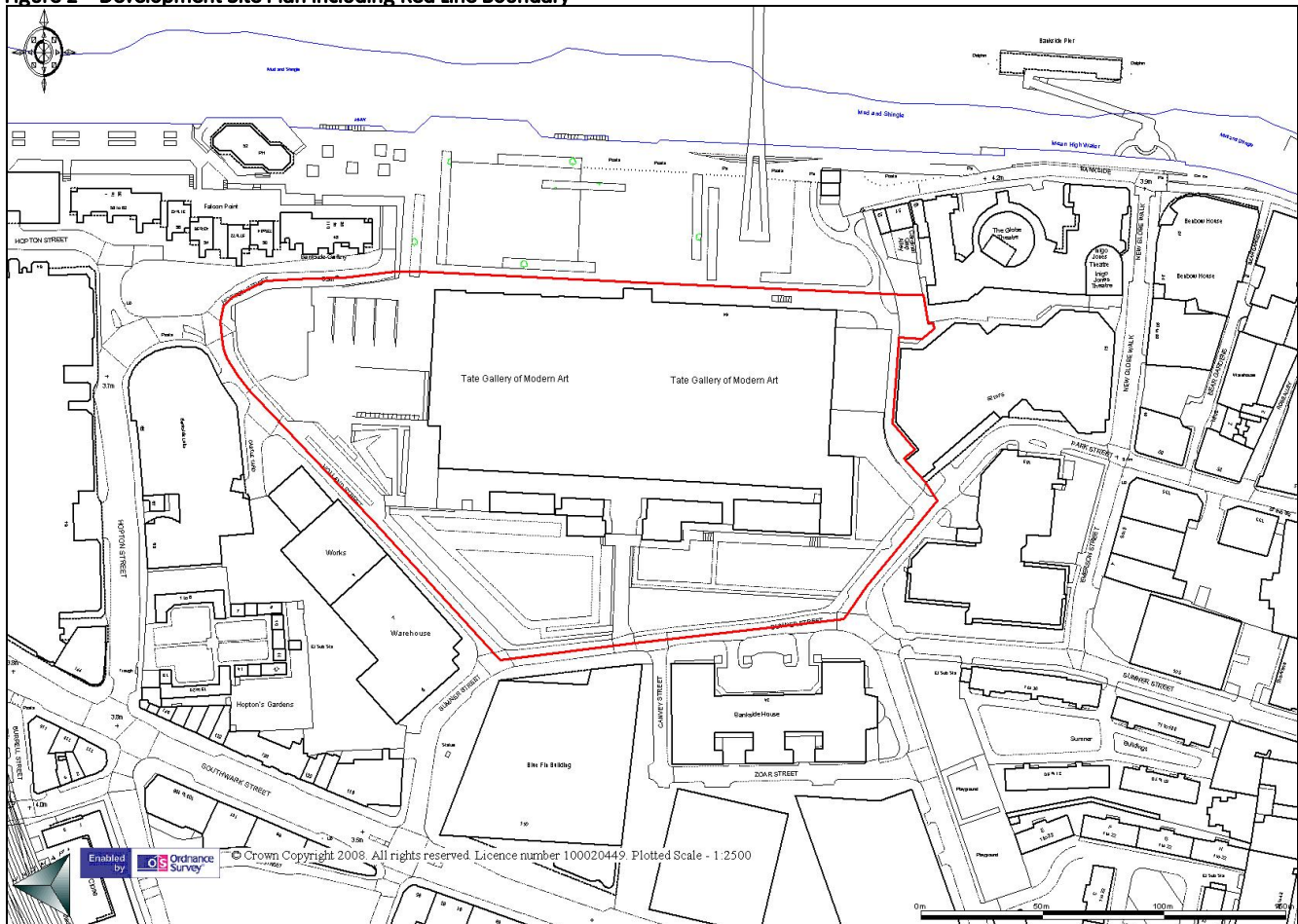
The significance of residual impacts has been evaluated with reference to definitive standards, accepted criteria and legislation, where available. Where it has not been possible to quantify impacts, qualitative assessments have been carried out, based on professional experience and judgement. Impacts have been classified as being of **adverse, negligible or beneficial** in significance; and of **minor, moderate or major** in magnitude. Where possible, impacts have also been assigned a geographic scale (i.e. local, district, regional, national or international).

The ES also describes the consultation process undertaken to ensure that the views and concerns of interested parties have been given due consideration in the design process. The ES consists of:

- **Volume I: Environmental Statement.** This document forms the main body of the ES detailing the results of environmental investigations, impacts arising and proposed mitigation measures. This volume also includes details of opportunities for socio-economic, cultural and environmental benefit;
- **Volume II: Townscape and Visual Impact Assessment.** This document assesses the impact on key and strategic views to and from the site;

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Figure 2 – Development Site Plan Including Red Line Boundary



- **Volume IIIa: Technical Appendices.** This document contains extra supporting technical information used to inform a number of the assessments in Volume I of the Environmental Statement; and
- **Volume IIIb: Technical Appendices.** This document contains extra supporting technical information used to inform other assessments in Volume I of the Environmental Statement.

**Volume II** is accompanied by a full set of verified images of the Development, as agreed with the LBS during the Scoping Phase.

The contents and conclusions of the EIA are based on the architectural design as of November 2008, site investigation work and baseline surveys together with the expert knowledge of the consulting team.

## Consultation and Public Communications

The EIA includes a programme of ongoing consultation, which is critical to the development of a comprehensive and balanced ES. Views of statutory and non-statutory consultees serve to focus the studies and identify those issues requiring further investigation. Consultation also enables mitigation measures to be introduced during the project design process.

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A Scoping Report was produced and submitted to the LBS in September 2008. The Report outlined the proposed approach to undertaking the EIA and detailed the existing environmental works undertaken for the site. A Scoping Opinion from the LBS in November 2008 established the scope of the ES and requested some additional views for the Townscape and Visual Impact Assessment.

Key consultees involved in the evolution of the design and preliminary assessment of environmental impacts have included:

- LBS;
- Commission for Architecture and the Built Environment (CABE);
- English Heritage (EH);
- The 20th Century Society;
- Environment Agency (EA);
- Transport for London (TfL);
- Greater London Authority (GLA); and
- Bankside Liaison Group.

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## Analysis of Alternatives

Under the 1999 Environmental Impact Assessment Regulations (as amended 2008), an ES is required to provide *“an outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for [his] choice, taking into account the environmental effects”*.

Alternatives analysis is a key part of the EIA process and serves to ensure that environmental considerations are built into the project design at the earliest possible stage.

The EIA has considered the *‘no development’* alternative, the use of *‘alternative sites’* and the design evolution in response to consultee concerns. For the *‘no development’* option a world-class art gallery would not be provided, a high-quality public realm would not be created and the positive impacts of improved pedestrian routes within the LBS, the contribution of the Development to London as a world city and London’s cultural offering would not be realised.

The no *‘alternative sites’* for the Development were considered since it is the aim of the Development to develop and expand TM1, such that a new integrated building would be provided. The site location accords with the London Plan as the area in which TM1 should be located as one with *“mixed uses with strong arts, cultural or entertainment character”*. Specifically, the South Bank’s role as an entertainment and cultural centre is acknowledged in the London Plan. In addition, LBS’s adopted Unitary Development Plan (UDP) Proposal Site 2P safeguards the land immediately to the south of TM1 for *“cultural uses of national and international significance”*.

The Development has been designed to deliver a high quality building and associated public realm that is able to meet the Applicant’s aspirations and commercial success, whilst responding to planning considerations and taking into consideration potential environmental impacts.

## Key Features of the Development

Key elements of the Development comprise the provision of 24,786m<sup>2</sup> (GEA) of new accommodation, as follows:

- A new building, abutting and linked into TM1 at levels 1 and 2 and via a new pedestrian bridge at Level 5. The building will comprise 11 floors (levels 1 - 11) with a height of 65 metres (m) above ground level;
- The addition of 22,492m<sup>2</sup> of gross internal area (GIA) floor space;
- A mix of uses including display and exhibition spaces, performance spaces, education and learning facilities, offices, catering, retail and associated support facilities in addition to back of house and plant space;
- Provision for car parking spaces (including 12 spaces for disabled use, five standard spaces for Operational Support, one of which is for disabled

use (as existing provision), six parking spaces for delivery vans and 9 motorcycle spaces), along with 186 bicycle spaces split between public and private use;

- The creation of a new north-south pedestrian route through the Turbine Hall; and
- An improved public realm to the south, east and west of TM1 and TM2.

## Access for All Users

The building and associated public realm have been designed to provide unlimited access and support for visitors of all ages, and with special access requirements. There are six underground and five national rail stations within walking distance of the site. The Development will also be served by six bus routes and a boat service between Tate Britain, and Tate Modern that will operate during gallery opening hours, along with a commuter ferry in operation everyday. Further details of how the Development will provide access for all is summarised in *Chapter 4: The Proposed Development* of the ES and is described in full in the Design and Access Statement, which accompanies the Planning Application.

## The Demolition and Construction Programme

EDF Energy’s (EDFE) need to upgrade the electricity substation, which is housed in the Switch House, forming the southern facade of TM1 has facilitated the realisation of the Development. Upgrading the electricity substation creates an opportunity to reduce the space it occupies on-site; as a result, the Applicant is able to develop the disused areas (western section) that the substation currently occupies to the southwest of the Turbine Hall. Collaboration with EDFE has also allowed groundbreaking solutions to energy requirements in that the waste heat from the substation will be harnessed to serve the Development.

The demolition and construction programme is anticipated to take approximately **39 months** from start to completion (Figure 3).

Planning for demolition and construction may be subject to modification during the detailed construction planning. For this reason, the demolition and construction programme, and methodology is based on reasonable assumptions in the construction programme, along with the collective experience of the consulting team with similar projects. As such, the programme will involve the following key stages:

- Switch House foundation strengthening;
- Enabling works;
- Demolition within the Oil Tanks and up to EDFE demarcation;
- Piling foundations within Oil Tanks and immediate area;
- Structural frame abutting EDFE demarcation;
- Demolition of EDFE Switch House structure;

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- Structural frame to Switch House area;
- PC envelope;
- Glazing to windows;
- Temporary weather tight;
- Internal Mechanical and Electrical (M&E) services;
- Internal finishes/fit out;
- Brick work cladding;
- Commissioning; and
- External works and landscape.

An overall Demolition and Construction Method Statement (DCMS) and Environmental Management Plan (EMP) have been produced that will apply to all contractors, sub contractors, trade and site management. These documents place obligations on contractors to adopt best environmental practice in accordance with the LBS's Environmental Code of Construction Practice and requirements under the Considerate Contractors Scheme.

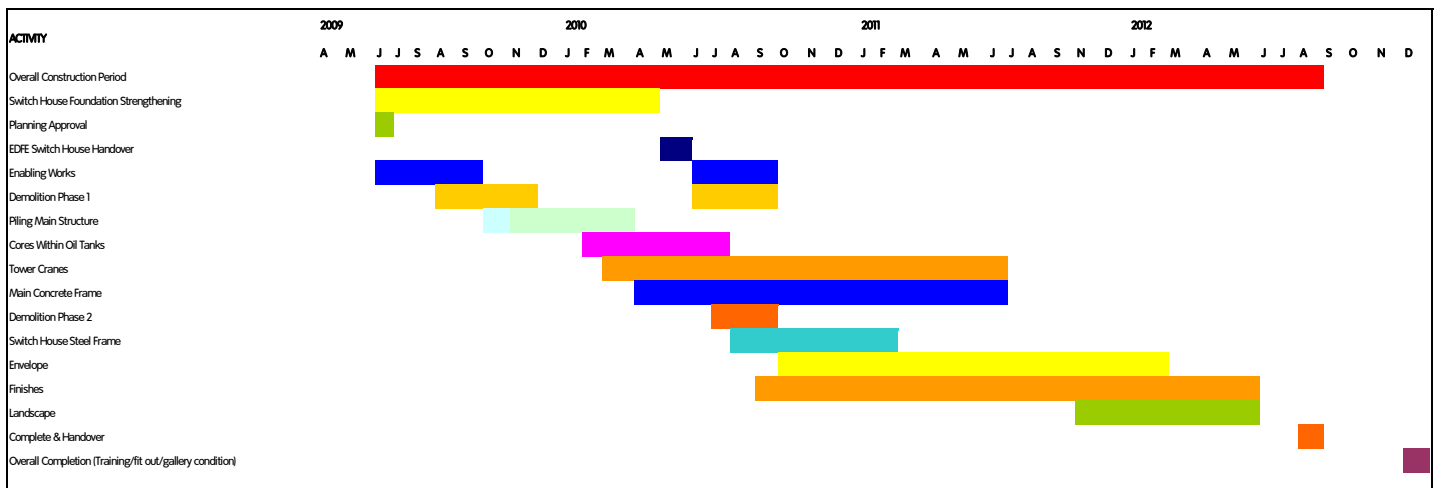
- Protection of ecological and archaeological resources;
- Site hoarding, housekeeping and security; and
- Provisions for complaints.

## Planning Policy Context

The Development has been assessed against relevant national planning policies, including Planning Policy Guidance Notes (PPGs) on Planning for Open Space, Sport and Recreation (PPG17), Transport (PPG13), Planning and Noise (PPG24), Archaeology and Planning (PPG16) and Planning Policy Statements (PPSs) on Delivering Sustainable Development (PPS1), Planning for Town Centres (PPS6), Planning and Pollution Control (PPS23) and Development and Flood Risk (PPS25).

In addition, the Development has been assessed against the relevant regional policies contained within the London Plan and local policies within the LBS adopted Unitary Development Plan (UDP) and associated Supplementary Planning Guidance (SPG).

**Figure 3 - Indicative Demolition/Construction Programme**



The DCMS, which is presented in ES *Chapter 5: Demolition and Construction* and summarised within the standalone EMP document that accompanies the Planning Application, include detailed working procedures for the control of emissions and environmental risk, and specify working hours and site logistics. The EMP includes measures for, among others:

- Managing neighbour relations;
- Traffic management (including site access/egress);
- Road and utility diversions;
- Parking provisions;
- Waste management;
- Clean road management;
- Noise control;

TM1 is located on a previously developed 'brownfield' site in central London and is well served by public transport. Therefore, it is an appropriate location for new development.

As stated above, the Development is in conformity with the site-specific designation, Proposals Site 2P within the LBS adopted UDP which safeguards this land for '*cultural uses of national and international significance*'.

Achieving good design is a key element of the Applicant's strategy. The ambition is to achieve a genuinely world-class exemplar development for London. The height of the Development is considered to be appropriate for its urban context. In particular, the Development respects the scale and nature of its surroundings and has been designed to mitigate any impact on amenity.

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The Applicant is committed to improving the quality of the open space across the Tate Modern estate. The Development ensures that large expanses of high quality open space will remain to the north, south and west of TM1 and TM2 (Figure 4).

The Development will enhance the appearance of the riverside by introducing a new landmark building, designed to very high standards. It will also be of a scale and use appropriate to the Thames Special Policy Area.

TM2 will be an energy efficient building with a low carbon footprint, and has integrated measures into the design in order to be able to achieve this. TM2 will be of international significance and will provide a stimulus for growth in the local economy, as well as encouraging further physical regeneration. This will be of substantial benefit to the local community and visitors to the Borough.

Figure 4 - TM2 Proposed Western Elevation



## Sustainability of the Development

The Development has been assessed against a set of sustainability criteria, targets and standards described within national, regional and local planning policy. Key sustainability criteria, as defined by national planning policy include:

- Social progress that recognises the needs of everyone;
- Prudent and sustainable use of natural resources;
- Effective protection of the environment; and
- Maintenance of stable levels of economic growth and employment.

At the regional and local level, the Development has been assessed against the key sustainability criteria detailed within the London Plan, The Mayor's Energy Strategy, the 'Renewables Toolkit' and other Mayoral strategies on biodiversity, air quality, waste management, and noise.

In addition, a bespoke sustainability assessment has been undertaken for the Development based on the GLA Supplementary Planning Guidance on 'Sustainable Design and Construction' and the LBS Supplementary Planning Guidance on Sustainability to create a sustainability profile of the Development. This is summarised within *Chapter 7: Sustainability* of the ES. A full assessment to fulfil the requirements of

the SPG on Sustainable Design and Construction is presented in a standalone Sustainability Statement submitted in support of the Planning Application.

An Energy Assessment has also been prepared for the Development and is submitted as a standalone document. A bespoke protocol Building Research Establishment Environmental Assessment Method (BREEAM) assessment has also been carried out. The key aspects of the Development in relation to sustainability can be summarised as follows:

- The Development will make the best possible use of developed land by providing a carefully designed mix of public space amenity and world-class display/gallery/education space;
- The energy strategy adopted for the Development has been prepared in consultation with the GLA and seeks to minimise energy consumption through the design of the building envelope, the ventilation strategy and through the engineering of the building service systems;
- The recovery of waste heat from the EDF Energy substation will be included as a groundbreaking solution to energy requirements;
- Incorporating the raft of proposed passive measures, and energy efficient services into the scheme, results in a sizable, further 37% saving in carbon emissions (and a further 46% energy reduction) over the baseline scheme. As groundwater cooling, and GSHP heating and cooling are considered as renewables, a further 11% saving in carbon emissions, (and a 16% energy reduction), can be made. The total carbon saving is 44% and the total energy saving is 54% over the baseline scheme. Whilst this falls below the GLA target of a 20% reduction in carbon emissions as a result of on-site renewable energy generation, it needs to be considered in light of the significant energy and carbon savings made as a whole;
- A building Users' Manual will be developed to ensure ongoing efficiency of buildings systems and services once the commissioning process has been completed;
- A principal aim during demolition and construction will be to reduce the amount of waste generated and exported from the Development site;
- The demolition and construction phase will create a number of short to medium term construction jobs. Once operational a number of direct full time jobs will be created and will result in further indirect and induced employment jobs as a result of tourism and local spending;
- The Development will contribute towards life long learning through the provision of learning and education opportunities. This in turn will improve links between educational institutions and business, making Bankside a further

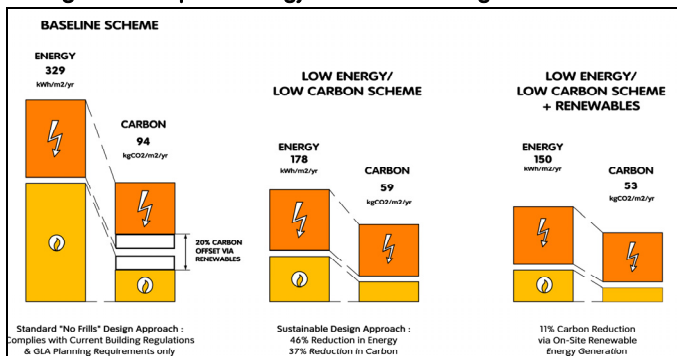
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magnet for the creative and cultural industries nationally; and

- The Development will obtain a 'Very Good' rating in the BREEAM bespoke protocol, with a clear target to achieve 'Excellent' once the Development is complete.

Therefore, the Development will achieve a very high standard of sustainability, including a range of measures to reduce its resource consumption and environmental impact. Figure 5 shows the energy and carbon savings.

Figure 5 - Proposed Energy and Carbon Savings



## Culture and Socio-Economics

The EIA has assessed the cultural and socio-economic impact of the development in *Chapter 8: Culture and Socio-Economics*. The assessment included impacts during both demolition and construction and once the Development is in operation.

With regards to demolition and construction, the Development will likely result in a total temporary employment of 1,226 person years (or an average of 377 construction workers per year over the 39-month construction period). As such, the employment opportunities generated during the construction phase of the project are considered to create a **minor beneficial** impact on local and regional unemployment figures, economic activity and the labour market.

When complete, it is estimated that the total net employment for the Development will be 306 employees, which is considered to be a long-term **minor beneficial** impact to the local area and region. In addition, the Development will:

- Contribute to London's World City status through expanding the breadth of London's cultural offer; enhancing Tate Modern's position as a world leading and internationally acclaimed art museum; and sustaining and enhancing London's reputation as world leading in the visual arts and new media technologies;
- Provide an opportunity for Tate Modern to build upon its reputation as a leading public institution on the south side of the River Thames; drive the development of London's South Bank as a world centre of excellence and cluster for arts and culture and stimulate further growth in the area;

- Create links with the local community, in particular through education and life long learning;
- Generate an estimated increase in visitor numbers to 5.2 million per annum, with a further 1 million to the immediate locality in proximity to the site as a result of the improvements to the public realm;
- Provide a major catalyst for redevelopment within the London Cultural Quarter;
- Generate temporary and permanent employment;
- Create new strategic pedestrian routes through the Borough; and
- Facilitate increased diversity in visitors and users.

## Pedestrian Movement and Public Realm

The EIA has assessed the impact of the Development on the surrounding pedestrian movement network and public realm. Figure 6 presents the baseline pedestrian flows of the Development site, based on surveys taken in August 2008, the busiest month in terms of pedestrian movement volumes.

Overall, the Development will have a moderate beneficial impact on pedestrian movement. The opening of the new southern entrance will relieve pressure on the riverside and Turbine Hall entrances, and will encourage visitors to approach the building from the south, which will have a **minor beneficial** impact on natural surveillance and public safety to the south of the building.

Although pedestrian movement to the south of the building is predicted to increase, the current low levels of activity in this area means the impact on Level of Service (LoS) and pedestrian comfort will be **negligible**.

The creation of a new public square to the south of the building will open up the area, improving personal safety and lines of sight, and removing blank walls and blind corners. It will also draw visitors to the area, creating a vibrant and lively new public realm. This new public realm is considered to be of **major beneficial** impact to the area.

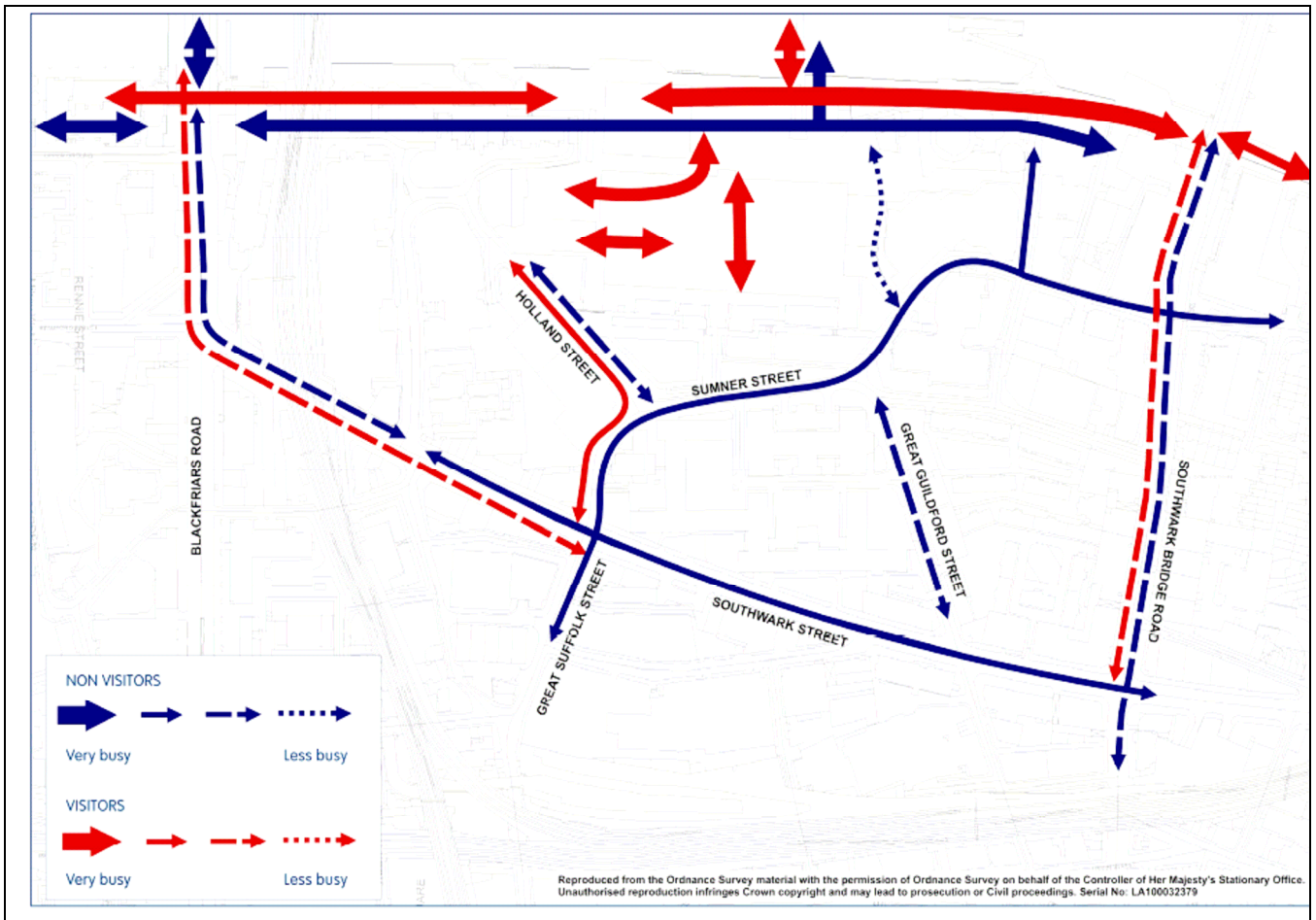
## Traffic and Transportation

*Chapter 10: Traffic and Transportation* of the ES considers the impact of the Development on the surrounding road network and public transport facilities. In particular, the Chapter includes consideration of the estimated increase in the journeys to and from the site during construction, and once the Development is complete, from both public and private transport, along with servicing requirements.



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Figure 6 - Baseline Pedestrian Flows



Note: Figure not to scale.

A full Transport Assessment supports the application and is summarised within the ES Chapter. The Transport Assessment has involved traffic surveys, analysis of cycling, bus, pedestrian routes and analysis of alternative modes of transport. Adverse impacts to traffic occurring during the construction phase are considered to be temporary and reversible. They will occur at a local level, and have been defined as being of minor-moderate significance, providing that the mitigation measures provided with the DCMS and EMP are followed.

TM1 is currently served by excellent public transport and by pedestrian and cycle routes. There are five London Underground (LUL) stations within walking distance of TM1; the nearest being Southwark and Blackfriars which are approximately an eight or nine-minute walk from the site. St Paul's and Borough station are also within a 1km of the site.

Although further from TM1 than Southwark and Borough stations, London Bridge station is used by visitors travelling on the Northern and Jubilee Lines. Figure 7 illustrates the baseline passenger movements at the London Underground stations near the site.

In addition, six London bus services serve this part of the South Bank, with a further nine passing the northern end of the Millennium footbridge.

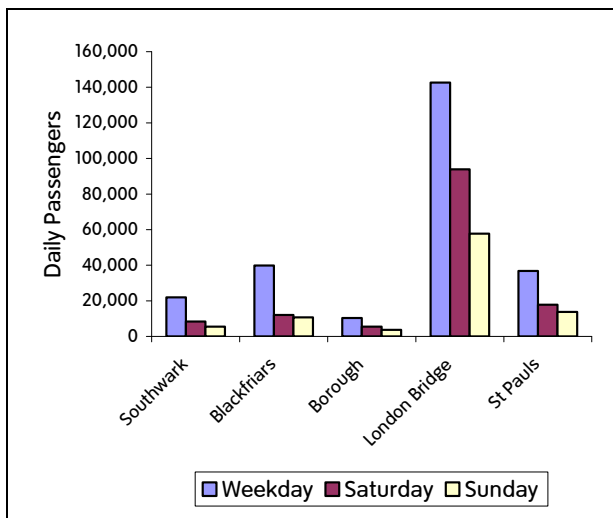
Cycling is presently an under-utilised mode of transport in London, but is growing in popularity, and encouragement will be given to this sustainable mode of transport. A total of 186 cycle parking spaces will be provided at the Development. Whilst not included in the Planning Application, the Applicant welcomes taking part in the 'Cycle for Rent' scheme being introduced through TfL and will enter into discussions on including this at the site in due course.

Excluding 2000, when the number of visitors was not typical due to the mid year opening, the average annual number of visitors is approximately 4.5 million.

There is a seasonal pattern in the number of visitors throughout the year, although this does include some significant variations. Figure 8 shows the average number of visitors by month for the years 2001 to 2007.

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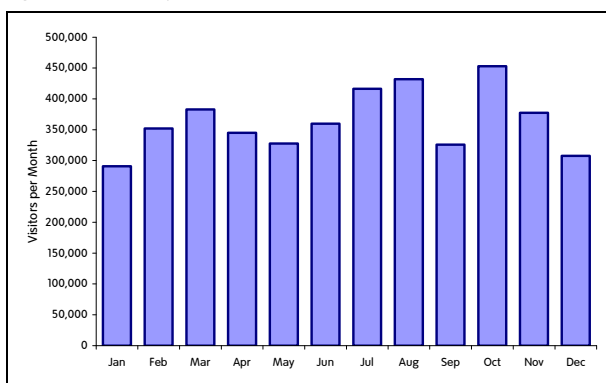
Figure 7 - Daily Passenger Movements at LUL Stations



The routes to be used by construction traffic and the site access/egress arrangement will be agreed with the LBS and TfL. Within the construction site boundary, an internal perimeter road will be established; this combined with three controlled access gates will reduce traffic on the immediate public roads adjacent to the site.

Following completion of the Development, the annual visitor numbers are anticipated to increase to around 5.2 million per annum. This is an increase of approximately 16% on the current average annual numbers that stands at 4.5 million. As a result there will be additional journeys associated with visitors to TM1 and TM2. It should be noted that during the first year after opening in May 2000, the number of visitors to Tate Modern was at a level similar to that planned for the future (2012). Therefore, the site has already experienced and managed the planned level of activity.

Figure 8 - Monthly Visitor Pattern



There will be no increase in the number of parking spaces provided for Operational Support. These will remain at five spaces, one of which is for disabled use. There will be three parking bays marked for delivery vans in both the eastern and western goods handling zones. The Tate minibus will use one of these.

With a very small proportion of visitors travelling by car and with extremely limited parking facilities for staff, the main potential for vehicular traffic impact is from servicing traffic. The Development provides for a second Goods Handling Zone as the creation of the new north-south pedestrian route through TM1 and TM2, results in the restricted use of the existing south Goods Handling Zone.

To cater for the increased servicing vehicle movements, the north-eastern Goods Handling Zone will be improved, and with the implementation of a Servicing Vehicle Management Strategy will be able to handle up to an estimated 62% of the weekly movements. The new south-west Goods Handling Zone will handle an estimated 32% of the weekly vehicle movements, so keeping to a minimum any disturbance to neighbouring residential properties.

The Development provides for the extension of a building that has become established as a major destination for visitors. The primary purpose of the Development is to provide more exhibition space and a greater range of facilities for visitors. Although it is expected that there will be an appreciable increase in the number of visitors to the gallery, it is not expected that this will be pro rata to the increase in the floor area.

The patterns of travel are well established with three quarters of visitors using scheduled public transport. A further 14% walk from home, hotel, work, or another attraction. The site is well located for public transport with a Public Transport Accessibility Level (PTAL) value of 6a; meaning that the location is considered to have excellent access to public transport by TfL's standards.

Following the implementation of a Servicing Vehicle Management Strategy, the scale of increase in servicing vehicle movements is considered to have a negligible impact on driver/cycle/pedestrian delay/journey times. Overall it is considered that the increase in servicing vehicle movements on journey times is of negligible significance.

However, there is considered to be a **minor-moderate adverse** impact to pedestrian and cyclist amenity due to increased servicing movements.

It is considered that the impact of all other increases in vehicular movements in the area will be of negligible significance. Although there is an increase in the proportion of visitors that travel to the site by car at the weekend, the lack of parking in the vicinity of the site will ensure that the impact of the additional car traffic is of negligible significance.

The expected number of visitors following the opening of TM2 is similar to that achieved in the months following the conversion of Bankside Power Station into TM1. At that time the Millennium Bridge was not open to the public; therefore, the public transport infrastructure was not so readily accessible. Since that time there have also been improvements to the Jubilee Line and investment in the bus services following the introduction of the Congestion Charge.

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## Wind (Microclimate)

The wind environment around a development is defined as suitable for different types of activity such as sitting or walking based on human comfort criteria. Also defined are conditions that would be unsuitable for wheelchair users or other pedestrians vulnerable to wind effects. The EIA has considered potential wind effects on the pedestrian environment around the site, within the Development footprint, within the public realm and at roof terrace level.

Wind tunnel tests enable the pedestrian level wind microclimate at the site to be quantified and classified in accordance with the widely accepted Lawson Criteria (Comfort Criteria). The wind tunnel tests deliver a detailed assessment of the mean and gust wind conditions around the Development in terms of pedestrian comfort and safety ratings, and provide a basis to assess the impact of the Development relative to the existing site conditions.

Overall, the wind conditions around the Development are considered to be within the acceptable range of conditions that might be experienced walking around any city centre in the south of England. A mitigation workshop was held between the wind-engineering consultants and Landscape Architect to design in mitigation in the form of additional landscaping at ground level. Residual impacts to the wind environment are generally classified as **minor adverse** to **minor beneficial** in significance at ground and terrace levels.

## Daylight, Sunlight and Overshadowing

The EIA has assessed the likely impact of the Development on sunlight and daylight availability for nearby existing residential receptors and on The Holland Street Buildings. Potential overshadowing to amenity areas around the site has also been assessed. Details of the full assessment can be found in *Chapter 12: Daylight, Sunlight and Overshadowing* of the ES.

The assessment has considered the impact that the Development will have on nearby receptors both during the demolition and construction phase and once the building is operational. During demolition and construction, part of the rear elevation to TM2 will be demolished, providing short-term daylight improvements to some of the neighbouring residential properties.

However, these benefits are not expected to be significant as scaffolding and hoardings will be positioned around the site. Overall, a **negligible** impact to daylight and sunlight is expected throughout the demolition and construction phase.

In terms of the completed Development, TM2 is located some distance from the neighbouring residential properties. In most cases the additional building mass associated with TM2 is hidden by the mass of TM1 and; therefore, the light reductions are **negligible**.

It is considered that for Falcon Point, Manhattan Lofts, Castle Yard Apartments and Hopton Street

Almshouses, a **negligible** impact to daylight and sunlight availability is predicted. While the reductions in daylight and sunlight are compliant with the BRE guidelines, there will be a small, barely noticeable loss in daylight or sunlight availability. With regard to overshadowing the BRE guideline criteria are met and a **negligible** impact is predicted.

With regard to overshadowing, the Building Research Establishment (BRE) guideline criteria are met and a **negligible** impact is predicted. The overshadowing analysis shows the Tate amenity areas will pass the BRE guidelines.

## Light Spillage and Solar Glare

In addition to daylight, sunlight and overshadowing the likely impacts of light spillage and solar glare have also been assessed. The full assessment is detailed in *Chapter 13: Light Spillage and Solar Glare* of the ES.

With reference to light spillage, the baseline conditions identify reasonably high levels of light around the existing site at night. However, the main source of artificial lighting around the site is the street lighting, so some of the surrounding buildings contribute to the overall levels of light in the street, both from internal lighting and from external aesthetic and security lighting.

With regards to light pollution, the closest residential receptor is Hopton Gardens, approximately 63m away from TM2. At this distance the level of light that would be received upon the overlooking windows, would be indiscernible and so is considered to be of **negligible** significance. External lighting within the public realm to the south and through the east and west gardens will be designed to minimise any needless spillage of light into the night sky. As such, no further mitigation measures are proposed.

The transient reflected sunlight assessment has located four positions at which transient reflected sunlight or glare may potentially occur. These four positions were assessed further in a detailed positional glare analysis from a street level viewpoint and eight instances of potential glare were found to occur upon the façade of the Development assuming a highly reflective, smooth façade.

The assessment assumes a '*worst-case*' scenario, in that there is a cloudless sky, no overriding weather conditions and that the façades of the Development are covered in highly reflective materials with no diminution of reflectivity. In reality these factors will significantly reduce the probability of potential glare occurrences.

The potential instances of glare occur upon sections of the Development, which will be clad in Perforated Brickwork and Pilkington Suncool Neutral glass. The Pilkington glass will diffuse the direct sunlight that would otherwise potentially cause glare. The mitigating effect of the Perforated Brickwork and Pilkington glass, with low specular and reflectance values, is shown upon the images within Volume IIIa: *Technical Appendices* of this ES. The use of Pilkington Suncool glass will mitigate against the potential occurrences of glare, so that the residual impact of

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the instances of glare are considered to be of **negligible** significance.

## TV and Radio Reception

The EIA includes a screening assessment of potential impacts to television (TV) and radio reception surrounding the Development area. Both analogue and digital reception have been considered. The Crystal Palace transmitter provides television signals for the site and for the surrounding properties. Many tall buildings are located within the immediate environment, making the reception of television signals difficult at present.

During the demolition and construction phase, the presence of tower cranes on site may cause potential interference to TV reception due to shadowing and reflection effects. Due to the temporary nature of these potential impacts, the residual impact is considered to be of **negligible** significance.

The shadow from the Crystal Palace and Croydon transmitters will lie in lines north-northwest of the site for up to 1 kilometre (km). Beyond this distance the loss in TV signal is not considered to be significant. The orientation of the various elements of the Development relative to the incoming terrestrial TV signals means that reflections are unlikely to be received by viewers. Therefore, 'ghosting' is unlikely to be an issue.

There are 41 terrestrial aerials in the shadow areas serving approximately 70 flats, which are predicted to lose some signal. For those dwellings that have their terrestrial reception subjectively degraded mitigation measures will include upgrading the existing aerials by increasing their height and/or gain or providing a non-subscription satellite service which is supplied by either the BBC and ITV ('Freesat') or by 'SKY' for a one-off cost.

Although there are predicted to be no dwellings that will suffer from the reception of reflected signals, should there be any, mitigation measures will include the provision of a digital terrestrial television (DTT) set-top box (Freeview) so as to receive digital terrestrial signals that are impervious to 'ghosting'. It is important to note that in 2012 all analogue terrestrial signals in London will be switched off, leaving only DTT signals. This means that by 2012 no households will be using analogue signals that could be prone to 'ghosting'.

Domestic satellite dishes point to the southeast. The satellite shadow that the Development would cast would be to the northwest and would be approximately 126m long. There are no domestic dwellings in this area so there is predicted to be a **negligible** impact to domestic satellite signals from the Development.

## Archaeology and Built Heritage

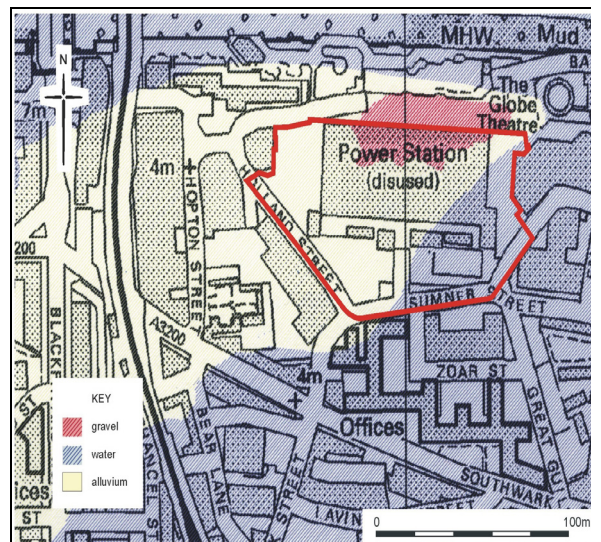
The EIA has assessed the impact of the Development upon the archaeological and built heritage resources of the site through a desk-based review of secondary resources including historic maps, the Greater London Sites and Monuments Record and archaeological

archives. A Written Scheme of Investigation (WSI) for archaeological evaluation has been approved by the LBS. This evaluation, consisting of the excavation of two trial pits in the only area of previously undisturbed land in the piling layout will take place before determination of the Planning Application. The Archaeological Report will be submitted to the LBS as soon as it is available to either agree that there will be no impact to the archaeological resource from piling, or agree additional construction phase mitigation if necessary.

Southwark is an area of archaeological significance as stated by the LBS's Archaeology Supplementary Planning Guidance, and national Planning Policy Guidance Note 16 (PPG16). In addition, the Southwark Plan policies state that archaeology is a finite and non-renewable resource, and any development project that has an impact on archaeology contributes to the cumulative erosion of this resource.

Taking into account previous archaeological work in the vicinity, the assessment concludes that the site has moderate potential for the discovery of *in-situ* archaeological prehistoric remains, low potential for Roman (Figure 8) and Saxon remains in the vicinity of the site, moderate potential for Medieval remains and high potential for remains from the Medieval-modern period. However, based on historical maps and plans of the site, it is likely that previous ground reduction will have removed all or most of any historic ground features (e.g. floor levels, road surfaces, etc) in areas of the Switch House and Oil Tanks. Figure 9 shows the Roman topography, while Figure 10 shows the site in 1572.

Figure 9 - Roman Topography

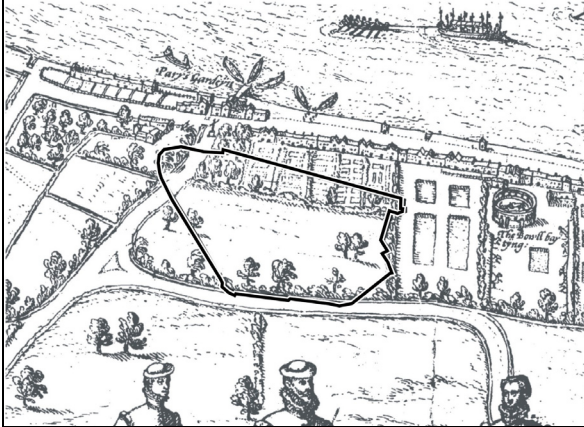


The depth of foundations and basements of the current building are likely to have removed all archaeological evidence. However, a small area outside the current basement in the northwest area of TM2 may offer moderate-to-high potential for archaeological survival (although there may be truncation from post-medieval properties). The proposed basement will not have an impact here but a significant number of piles are proposed in this area, which will remove all archaeology within the

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footprint of each pile. The dense layout of the piling would make the surviving archaeological resource (potentially preserved between each pile) both inaccessible and incomprehensible in terms of any archaeological investigation in the future.

Figure 10 - Braun and Hogenburgs' Map of 1572



Therefore, it is considered that the environmental impact of the Development on archaeological resources could be successfully mitigated by the agreed programme of archaeological investigation undertaken prior to development, to achieve preservation by record. As stated previously, the results of the archaeological evaluation will be submitted to the LBS as soon as they are available prior to determination of the Planning Application. An informed decision regarding mitigation will be based upon these results. Residual impacts to archaeology are classified as **negligible to minor adverse**.

## Ground Conditions

Under UK law, land contamination is a material planning consideration and a planning authority may require investigation, and if necessary, a programme of remediation before planning permission is implemented. This legislation is designed to protect resources and to prevent harm to people and the environment.

The ground conditions, contamination potential and assessment of potentially polluting hazardous materials at the Development site have been assessed through a desktop study of the baseline conditions (Phase I Assessment), along with a Phase II Site Investigation. Both the Phase I and II assessments are reported in *Chapter 16: Ground Conditions* of the ES.

The impact of the Development on existing ground conditions has been assessed through consideration of impacts associated with potentially contaminated soils in the context of the existing site condition, construction works and site operation. Historical investigations have also enabled a geotechnical evaluation of the potential for soil movements to be undertaken. In addition, the potential for unexploded ordnance and underground structures on site has been assessed. The Phase II Site Investigation found areas of localised contamination in the vicinity of the Oil Tanks and Switch House.

Whilst there is potential for **minor adverse** impacts to human health, property and controlled waters during the demolition and construction phase of the Development, the adoption of standard construction phase mitigation measures detailed within *Chapter 16: Ground Conditions* of the ES and in the EMP would reduce the impacts on land quality to a **negligible** level. During construction, potential risks will be managed through appropriate design and construction techniques together with appropriate site management procedures.

Following completion of the Development a low to medium sensitivity environment with respect to human health, property and controlled waters due to its primarily commercial end use.

The Development represents a low sensitivity environment with respect to effect on property due to its primarily commercial end use. The magnitude of potential impact on human health and properties is estimated as **negligible** due to stable geological conditions and absence of mining hazards, landfills and generally low likelihood of other geo-hazards. In addition, no aggressive ground conditions have been identified and based on current industry guidance the risk posed by ground gases is considered low, but will require some limited mitigation.

Whereas, the significance of the impact on Controlled Waters is estimated as **minor adverse** due to the site being underlain by a being underlain by a Principal and Secondary Aquifer. However, the Secondary aquifer is not considered sensitive receptor as there are no abstractions in the vicinity of the site, and the site does not lie in a source protection zone for the Principal aquifer, nor is it in hydraulic continuity due to the presence of the London Clay stratum.

The mitigation measures for potentially significant adverse impacts identified in the previous sections of this Chapter are summarised in *Chapter 16: Ground Conditions* of this ES.

The implementation of risk management measures to mitigate identified areas of contamination within the site will be undertaken throughout the site enabling and construction phase of the Development, such that existing pollutant linkages (source-pathway-receptor) will have been broken prior to the operational phase of the Development. Activities during the operational phase of the Development have the potential to create additional contaminant sources on the site. However, it is considered likely that the magnitude of impacts due to contamination during the operational phase of the Development will be **negligible**, as site operations will be undertaken under appropriate operational management procedures.

Provided the mitigation measures are adopted, the overall significance of the environmental impacts during the demolition and construction phase of the Development, with respect to land quality is considered **negligible**.

The overall significance of the environmental impacts of the Development, with respect to ground conditions during the operational phase, is

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considered long term permanent **minor beneficial** as above ground activities are unlikely to affect ground conditions. In addition, ground conditions are likely to improve surface water discharge quality and reduce the potential for existing, and historic land use contamination to affect environmental receptors.

## Water Resources and Flood Risk

The EIA addresses the impact of the Development on the surface water, hydrology and hydrogeology of the surrounding area. The EIA also examines the potential for fluvial/tidal flood risk and is accompanied by a full Flood Risk Assessment (FRA) including breach modelling, which is located in Volume IIIb: *Technical Appendices* of the ES.

In addition, direct consultation with external parties included the commissioning of a Landmark Envirocheck Report® to evaluate the regional presence of water abstractions and potentially contaminative land use. Consultation has been carried out with the following bodies:

- EA;
- Thames Water Utilities Limited (TWUL); and
- LBS.

The methodology used to identify the water resources and flood risk baseline conditions at the site has involved the following stages:

- Identification of potential surface and groundwater receptors including lost rivers and perched groundwater; determination of their current use, quality and trends in quality; levels of protection afforded by impermeable strata and any links between receptors;
- Determination of the short-term, medium-term and long-term impacts of the Development on these receptors including an assessment of any residual impacts following mitigation;
- Evaluation of the significance of these impacts relative to the quality and quantity of the receptors; and
- Identification of suitable and appropriate mitigation measures for all stages of the Development (i.e. demolition, construction and operation) and an indication of how these measures will affect the significance of any impacts.

Demolition and construction activities have the potential to lead to the following sources of surface and groundwater pollution:

- Increased suspended sediment loads;
- Mobilisation of oils and fuels;
- Mobilisation of concrete and cement products;
- Disturbance of potentially contaminated land; and
- Disturbance of foul drainage.

The River Thames flows from west to east, approximately 100m north of TM1 and is the only surface water body with the potential to be impacted during demolition, construction and operation of the Development. The river forms part of the River Thames and Tidal Tributaries Site of Metropolitan Importance (SMI) for nature conservation.

From the 1950s onwards, the water quality in the River Thames has been consistently improving, mainly as a result of improved effluent discharge management and improvement in the quality of industrial and sewer discharges. The water quality of the River Thames today is considered sufficient to support a wide range of flora and fauna. A good indicator of water quality is the salmon population, which has been growing steadily.

The EA have indicated that there are currently no surface water abstractions within 250m of the Development site. The nearest is 658m northeast (NE) of the site at Walbrook Wharf and is used for miscellaneous industrial processing. Whereas, no discharge consents have been granted within 250m of the site. Based on this, the significance of the River Thames as a source of surface water is low. However, the River Thames is of high importance for the discharge of wastewater, thus any activity that would reduce the dilution available would have a major adverse impact on the quality of the receiving waters.

TWUL indicate that an abandoned water main in the northwest part of the site running from Hopton Street to the location of the filled underground car park to the north of TM1. Another water main is shown in the southeast part of the site, running from Park Street towards the eastern side of the Switch House, which is located near the southeast corner of the main building.

The site lies within Flood Zone 3, which indicates a probability of flooding greater than 0.5% from tidal sources. However, the site is protected from the River Thames by means of raised ground between the riverbank and the north face of TM1. The Thames Tidal Barrier also protects the site.

The EA has indicated that the flood defences in the surrounding area are in good condition and afford the required statutory defence level of 5.41m above ordnance datum (AOD). The defences at the site itself are at a height of 5m AOD; however, ground levels south of the wall slopes upwards, so that under normal circumstances these defences, working in conjunction with the Thames Tidal Barrier, would protect the site from a 1 in 1,000 year flood event.

Overall, no significant impacts to water resources are expected to occur throughout the demolition and construction phases of the Development provided that standard, best practice mitigation measures are applied as discussed in *Chapter 17: Water Resources and Flood Risk Assessment* of the ES. The potential impact to aquifers due to physical disturbance is assessed as being of **negligible** significance.

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The increase in impermeable area at the site as a result of the Development will have a **minor adverse** impact, as this will be the slight increase in the amount of surface water runoff generated from the site. However, a dedicated drainage system to accommodate these changes will provide attenuation, which is expected to reduce the existing runoff rates by at least 70%.

Surface water runoff attenuation and storage will have a **Major Beneficial** impact on the existing drainage network surrounding the site, thereby reducing associated flood risk and risks to water quality from combined sewer overflows.

Based on the existing level of defence, the Development site does not lie within an active floodplain and the Development would; therefore, not impact on existing flood levels or existing flood flow paths. In addition, it would not increase the flood risk elsewhere.

In the event of a failure at the Thames Tidal Barrier, which is extremely unlikely, the area most affected would be the south section of the southern landscaping. The TM1 and TM2 buildings will not be affected, as floodwaters will not inundate the buildings. Nonetheless, an evacuation plan for the southern landscaping will be developed so that staff be trained to guide visitors to safety in the unlikely event of a floodwall breach.

The basement levels are lower than the known groundwater levels around and underneath the site. The risk of groundwater flooding in the basement areas of the TM2 building will be engineered out through the use of flood proof materials. Thus, overall, it is considered that the impact of the flood risk at the Development site is **negligible**.

## Air Quality

The EIA has included an assessment of both construction and operational impacts to air quality. Operational impacts are associated with vehicular traffic movements/building services and plant emissions.

With regard to baseline conditions, the northern part of the LBS, including the TM1 site, extending from Rotherhithe to Walworth and Camberwell and up to the boundary on the River Thames is a designated Air Quality Management Area due to exceedences of National Air Quality Standards for Nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub>).

The residual impact associated with demolition and construction dust is anticipated to be of moderate adverse significance and of a temporary and local nature, reducing to **minor adverse/negligible** away from the site perimeter (i.e. beyond 30 - 50m). Emissions associated with site plant are predicted to be of **minor adverse** significance at nearby receptors, whilst road traffic movements attributed to the demolition and construction phase are expected to have a **negligible** impact on local air quality. Further control of any demolition and construction dust impacts, which do arise, will be ensured through

implementation of the mitigation measures and requirements for monitoring within the EMP.

Operational impacts have been studied using the Design Manual for Roads and Bridges screening tool. It has not been considered necessary to model private vehicle traffic emissions during the operational phase of the Development, as it is anticipated to generate little or no additional private vehicle traffic. The Development provides for only limited car parking for staff and visitors.

Following completion of the Development, private vehicle road traffic generated by staff and visitors to the gallery was screened out of the assessment as being of **negligible** significance (the Development provides for only 20 car parking spaces). Servicing vehicle traffic is anticipated to result in a **minor adverse** impact on local air quality at nearby road junctions, reducing to **negligible** with distance from these junctions and along Southwark Street.

The absence of any heating plant systems for the completed Development means that this aspect will inherently have a **negligible** impact on local air quality.

## Noise

In order to predict the impacts of the Development on noise levels, baseline noise surveys were carried out. Figure 11 shows the noise survey measurement locations around the site.

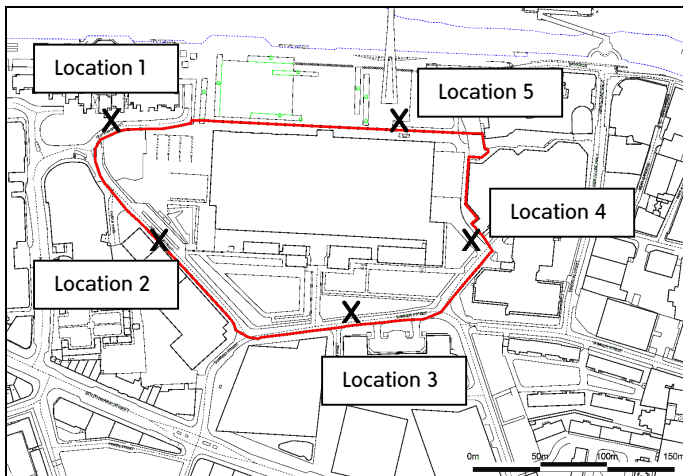
Were the construction works to be undertaken without mitigation, it is expected that construction noise would likely have a **moderate adverse** effect on the existing noise environment. However, this noise source would be temporary in nature and will only arise during the construction phase. Following mitigation using '*best practicable means*', such as careful selection of plant, use of acoustic covers and fitting of silencers, summarised in *Chapter 19: Noise* of the ES and detailed within the EMP, it is expected that impacts to local receptors will be of a **minor adverse** significance for a temporary period during construction.

Construction vibration will be of **negligible** significance. The method and times of activities will be agreed with the LBS prior to commencement of the works.

The Environmental Impact Assessment has also considered noise impacts from vehicular traffic associated with operation. The anticipated increase in traffic due to the Development (See *Chapter 10: Traffic & Transportation* of the ES) will not raise the noise level by a significant amount above the baseline level. Thus the increase in road traffic noise is assessed as being of **negligible** significance.

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Figure 11 - Noise Survey Measurement Locations



Noise due to deliveries/building servicing on the west side of TM1, when compared to the peak noise level already experienced, is considered to be of **negligible** significance. The Applicant's Servicing Management Strategy will allow flexibility to alter the location of deliveries (i.e. from the south-western Goods Handling Zone to the eastern one), to minimise noise during unsociable hours. Items of fixed plant and mechanical services will be selected such that the rating levels at the nearest noise sensitive receiver are at least 5 decibels (dB) below the lowest otherwise prevailing background noise level. Therefore, noise from fixed plant and mechanical services is considered to be of **minor adverse** significance.

## Ecology

The existing site comprises open ground to the south of the existing TM1 building with landscaped tree planting to the north, east and west. There are limited ecological receptors on site (a receptor is defined as an ecological component affected by a particular action or stressor). The nearest site of importance for nature conservation is the River Thames, which is a Site of Metropolitan Importance for Nature Conservation (SMINC) located adjacent to the northern boundary of the site. The Development lies within the black redstart 'Known Key Area' and peregrine falcons are known to perch whilst foraging at the top of the chimney.

A desk-based data review, Phase 1 Habitat Survey and bat surveys were undertaken to determine the ecological value of the site. The review of baseline conditions and the ecological evaluation has revealed that the following ecological receptors may be impacted upon and require further consideration:

- River Thames SMINC;
- Vegetation;
- Breeding birds;
- Peregrine Falcons;
- Black redstarts' nests during construction; and
- Bats.

To avoid direct impacts on the River Thames, construction materials will be delivered to the construction site via road not using the river itself. Delivery of materials to the site using the strategic road network is considered to have a lesser impact as the potential risk of pollution incidents is reduced. The potential for an indirect impact through runoff and sediment loading and waste disposal and emissions, in particular dust generation will be avoided through the implementation of mitigation measures during the demolition and construction phase, as detailed in the EMP. The SUDS strategy will ensure no adverse impact to the river once the Development is complete.

With regard to vegetation and breeding birds, loss of nesting habitat will be mitigated through the provision of additional planting within the Development's landscaping scheme. With the additional planting, considering the green space that will be lost, it is believed there will be an overall **negligible** impact on the local ecology.

Peregrine falcons are not currently using the existing site as a nesting site but as a 'look out' over the River Thames, a prime foraging area. Although the site has been used for nesting in the past, it is highly unlikely that it will be used in the near future due to more suitable habitat within their territory in the Barbican where they nested this past season. Given the high level of activity currently experienced at the site, and the distance of the construction area from the chimney, any impact on behavioural or hunting activities is assessed as being of **negligible** significance.

Despite the site lying within the black redstart 'Known Key Area', given the absence of suitable habitat and the high levels of disturbance around the site, it is thought to be highly unlikely that the Development site is used for foraging or nesting purposes. During the construction phase if the site is left dormant for two weeks or more within the bird-breeding season, then an experienced ornithologist will be brought on to the site to check for the presence of nesting birds. If nests are located or are believed to be on site, Natural England will be contacted immediately. Therefore, the impact to black redstarts is considered to be of **negligible** significance.

The bat surveys have shown that roosting bats are likely to be absent from the surveyed buildings and trees so no further surveys are necessary at this stage. Nevertheless, a repeat survey will be undertaken as a pre-demolition check. Immediately prior to the commencement of the demolition works, a licensed bat worker will undertake a final inspection (externally and internally – including of the enclosed lift shaft within Building B2 and the voids between the false ceilings and roof of Buildings B4/B5) and a detector survey (the latter, if demolition is during the bat active period) of the surveyed buildings to check for evidence of roosting bats.



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In summary, it is considered that during the demolition and construction phases, the impact to ecology will be of **negligible** significance and of temporary duration. There will be a **minor adverse** impact in relation to the loss of vegetation on site, although the planting proposed in the completed Development will mitigate for this.

Noise disturbance during this time will have a minor adverse impact on the birds in the area; birds are particularly likely to use the Thames area adjacent to the site. This disturbance will be of temporary nature and will be a **minor adverse** impact when taking into consideration the current disturbance on-site and from existing construction work on Bankside.

However, once the Development is complete it is considered that the improvement in the planting regime to the surrounding landscape will have a **negligible** impact on local ecology, through the replacement of nesting and foraging habitat for species of common bird and invertebrate. The presence of flowering trees and other perennials will provide a seasonal food resource for smaller species of common bird and invertebrate.

## Townscape and Visual Impact Assessment

Volume II of the ES assesses the likely townscape and visual impacts in relation to the Development. The assessment is based on the architectural drawings, which are being submitted in support of the application, and Computer Generated Images (CGIs) of the Development inserted into verified views.

London's built form is a result of a multi-layering of building forms that have been constructed over a long period of time. Further to this, London continues to evolve and as a result it is a vital, living city. This is key to appreciating the qualities of London's urban character, and herein lie's its potential for developmental flexibility and regeneration.

The LBS was consulted and agreed to the twenty-two views used to assess the likely impact of the Development on London's urban character. The assessment of the views considers the potential effects during the day twilight and at night.

Based on the Views Assessment for the Development, the impact significance on Built Heritage is considered to be of **minor-major beneficial** in significance. This is due to the high design quality of the Development and in particular:

- Recognition that this is a central urban area that would benefit from regeneration;
- Existing presence of tall buildings locally, which can be seen in relation to surrounding Conservation Areas;
- In relation to relevant National, Regional and Local Policy and Guidance, the locality is suitable for tall buildings; and
- TM2 will enhance the visual experience of the River Thames and this part of north Southwark, and will create an effective modern architectural counterpoint to St Paul's Cathedral across the

River Thames, and will define a major new southern entrance to complete the transformation of Tate Modern.

The suitability of the TM2 design in its location has been tested using eighteen different viewing positions (twenty-two views including four night views). The over-riding conclusion from the Views Assessment is that TM2 will benefit London's skyline, the River Thames frontage, and the developing streetscape of the South Bank and north Southwark, which is linked via the Millennium Bridge to the City of London and St Paul's Cathedral.

## Cumulative Impact Assessment

For the cumulative assessment, two types of impact have been considered:

- The combined effect of individual impacts, for example noise, airborne dust or traffic on a single receptor; and
- The combined impacts of several development schemes which may, on an individual basis be insignificant but, cumulatively, have a significant effect.

For the purposes of the cumulative impact assessment, the impact of the Development in conjunction with the Holland Street Buildings is considered.

The potential impacts that exist for the sensitive receptors are detailed in *Chapter 2: Assessment Methodology and Significance Criteria of the Environmental Statement*. A cumulative impact assessment is provided in each technical chapter of the Environmental Statement and all the cumulative impacts are summarised in *Chapter 21: Cumulative Impact Assessment* of the ES.

For the cumulative impact assessments presented in the ES, it has been assumed that the demolition and construction phase for the Holland Street Buildings proceeded as planned in October 2008 and will; therefore, coincide with the demolition and construction phase of the Development. In any case, should the delivery of the Holland Street Buildings be delayed for any reason, the ES has presented a 'worst-case' assessment with regard to likely cumulative demolition and construction impacts.

In order to mitigate against any potential adverse traffic impacts, extensive liaison between the relevant parties for both projects will be promoted to ensure a detailed construction vehicle management strategy is developed and implemented. Ongoing coordination of construction phase activities is occurring with the Bankside Liaison Group, to ensure minimal disturbance to surrounding residents and commercial properties. There will be a dedicated Public Relations strategy in place throughout the demolition and construction phase, with a dedicated point of contact for enquiries/complaints.

Residents will be kept fully informed of programme and activities. Liaison with the LBS and an Environmental Monitoring Strategy will ensure that environmental impacts are avoided wherever possible

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or kept within acceptable limits. The introduction of site hoardings and compliance with the mitigation measures detailed in *Chapter 5: Demolition and Construction*, *Chapter 18: Air Quality*; and *Chapter 19: Noise* of the ES. These are also described in full within the EMP, which seeks to reduce as far as possible adverse impact interactions, especially in terms of the short-term demolition and construction phase of the Development.

Once the Development and Holland Street Buildings are complete, there will be a number of **beneficial** cumulative impacts with respect to Pedestrian Movement and Public Realm, and Microclimate (Wind).

Overall, the impact of the Development and the Holland Street Buildings will be **moderately beneficial** in terms of pedestrian movement. The new food retail units on Sumner Street and Holland Street will further encourage visitors to approach the Development from the south, which will have a **minor beneficial** impact on natural surveillance and public safety to the south of the building.

The introduction of the new food retail units will further enhance the impact of the new public square in terms of opening up the area, improving personal safety and lines of sight, and removing blank walls and blind corners. It will also draw more visitors to the area than predicted for the Development alone, creating a vibrant and lively new public realm. This new public realm is considered to be of **major beneficial** impact to the area.

For microclimate (wind) conditions, the Holland Street buildings provide shelter for the Development site when the prevailing winds blow from the southwest. This shelter thereby enhances the local wind microclimate; particularly, along the west elevation of TM1 and TM2, within the landscaped pedestrian areas along Sumner Street, adjacent to the southern perimeter of the site and on the northwest corner of the terrace at level 11 of TM2.

As such, the change in the wind conditions as a result of the cumulative scenario and the respective impact in terms of the desired pedestrian usage range from **negligible** to **minor beneficial**.

## Residual Impacts and Conclusions

Residual impacts are defined as those impacts that remain following the implementation of mitigation measures. The EIA has demonstrated that the Development will lead to a number of major and moderate beneficial impacts. In particular, the Development will:

- Maintain Tate Modern's position as an internationally acclaimed art gallery;
- Provide inspiring use of an existing building that could otherwise become redundant as EDFE modernise their equipment;
- Incorporate exemplary measures of building sustainability including a raft of proposed passive measures, and energy efficient services into the Development resulting in a sizable 44%

saving in carbon emissions, (and a 54% energy reduction), over the baseline scheme;

- Provide an opportunity to drive the development of London's South Bank as a world centre of excellence and cluster for arts and culture;
- Provide a unique opportunity for the further development of links with the local community, in particular through education and life long learning;
- Provide an enhanced public realm featuring landscaping to the south, east and west of TM1;
- Provide a stimulus for growth in the local economy through temporary and permanent employment opportunities and increased local spending, as well as encouraging further physical regeneration;
- Open up new routes through London, in particular, building on the desired routes from the north to south sides of the Capital; and
- Open up the area to the south of TM1 and TM2 and create potential to improve the permeability of the area beyond the River frontage.

Overall, the Development is assessed as appropriate in terms of local, strategic and national policy and is considered to be of a design that addresses and responds to environmental, cultural and socio-economic considerations.

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## Contacts and Availability of the Environmental Statement

The ES is available for viewing by the public during normal office hours at the Planning Department of the LBS. Comments on the planning application should be forwarded to the London Borough of Southwark at the address below:

**Planning Development Control  
Chiltern House  
Portland Street  
London  
SE17 2ES**

The ES is also available for viewing by the public during normal office hours at The Clore Information Room, Tate Modern.

Alternatively, copies of the full ES and any of the other documents referenced within the Planning Application material, can be purchased by writing to the Applicant at:

**Tate Modern 2 Project Office  
Tate Britain  
Millbank  
London  
SW1P 4RG**

Volume I - ES	£125
Volume II - Townscape, & Visual Impact Assessment	£100
Volume IIIa - Technical Appendices	£190
Volume IIIb - Technical Appendices	£190
CD version of the ES (Volume I & II IIIa,b) and NTS	£20

Prices may change subject to supplier. Additional copies of the NTS are available in electronic form free of charge from the Applicant.