Deloitte.

Factory, Manchester

Non-Technical Summary (NTS)

October 2016

Contents

1 Non-Technical Summary

Background

1.1 This document summarises the Environmental Statement which accompanies the planning application submitted on behalf of Manchester City Council (the "Applicant"), in respect of a new ultra-flexible arts space known as Factory, Manchester, which will become the centrepiece of the new cultural and creative district of St John's in Manchester City Centre.

1.2 This document is a summary of the Environmental Impact Assessment (EIA) process in non-technical language. The Environment Statement (ES) sets out the findings for a full EIA which has been carried out to assess the impacts of the development.

1.3 The full findings of these studies and of the overall ES are presented in a comprehensive set of documents that can be viewed during normal office hours at the Planning Department of Manchester City Council (MCC) or online at www.manchester.gov.uk.

Site Location and Description

1.4 The site covers an area of 1.80 ha and is located east of the River Irwell and Water Street (the "Site)". The Site is located within the south western part of the St. John's Masterplan, on a site broadly bounded by the River Irwell and surface car parking (currently in use for construction of the Ordsall Chord) to the west, Grape Street and the Bonded Warehouse to the east, the MSI complex, including the 1830 Warehouse (Grade I Listed) to the south and Water Street and surface car parking to the north (refer to Figure 1.1).

1.5 The Site is currently occupied by surface car parking, the Starlight theatre (formerly in use by ITV for filming and events), Water Street and the Grade II Listed Colonnaded Railway Viaduct (in part), which was also in use by ITV for filming and storage.

1.6 The area around the Site is defined by a mix of leisure, commercial and residential uses including Spinningfields to the north, the Great Northern Warehouse and Deansgate to the east and MSI to the south. It is also situated 750m from the Deansgate / Castlefield Metrolink stop and a range of bus and Metroshuttle services.

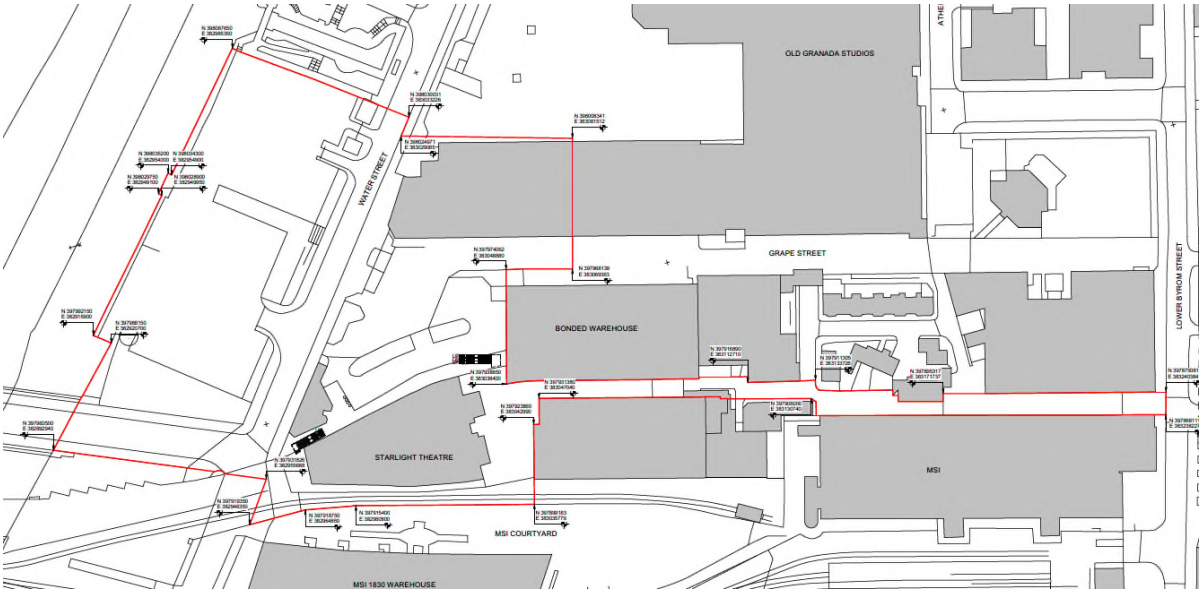


Figure 1.1 - Site Location Plan

Planning History

1.7 A planning history search for the site has been undertaken using Manchester City Council's Public Access system, the results of which are illustrated overleaf.

Table 1 - Application Site History

No.	Application Reference	Address	Description of Development	Date Approved
1	029238	Pineapple Public House, Water Street	Use of site as a coach drop-off and coach and car park after demolition of existing public house	July 1987
2	029036	Granada T.V. Centre Land bounded by River Irwell, Princes Bridge, former Grape Street and Liverpool Road	Creation of visitors facilities for public tour of part of existing T.V. centre	June 1987
3	029246	Former railway viaduct, adjacent to Water Street, opposite Princes Bridge	Erection of a building for use in association with Granada Tours, including a 400 seat auditorium, exhibition space, tour tram boarding point and New York set	July 1987
4	038206	Granada Studio Tours, Water Street	Change of use and extension to the Woodmill workshop to form a theatre	January 1991
5	051396/FO/CITY3/97	Granada Studio Tours, Water Street	Erection of a monorail	April 1997
6	079854/FO/2006/C3	Rag And Bone Site Land Bounded By Water Street Hampson Street And The River Irwell City	Change of use of existing railway viaduct arches to office (Class B1) use with associated external elevational alterations and landscaping of external areas to provide ancillary external car parking, servicing, cycle parking and refuse storage	November 2007

Transport and Accessibility

1.8 The Site is located in a highly accessible location within Manchester City Centre and benefits from excellent public transport links.

1.9 Access by public transport represents a key mode choice to St John's, summarised as follows:

- **Metroshuttle -** the Metroshuttle bus service covers most of the city centre and provides convenient access to major activity centres in the City. In particular, it completes the City's integrated public transport service and gives the St John's site quick and convenient public transport connections to all mainline railway stations, principal car parks and retail centres. Metroshuttle buses are free of charge, accessible by the mobility impaired, highly branded and are instantly recognisable to workers and visitors. High quality stops are provided along the service routes with clear branded images on bus stop plates to enable instant recognition.
- **Train -** The Site is conveniently located for access by a number of Railway Stations. The recently improved Salford Central Station is located immediately to the northwest of the Site and is a 5-7 minute walk away. Deansgate Railway Station is located to the south, a 7-8 minute walk away. Both of these nearby stations offer access to frequent services to

Lancashire, Merseyside and Bolton. Manchester Victoria and Piccadilly Stations are a much longer walk but both are readily accessible by Metroshuttle and provide links both nationally and across the conurbation.

  - In the future, the Northern Hub programme for rail around Manchester will offer faster services and greater capacity and in particular divert Trans-Pennine services via Salford Central making this station a more prominent focal point for services.

- **Metrolink** - The existing Metrolink services currently cover a broad area of Manchester and its outlying residential districts. Currently, fifteen trams in each direction stop at St Peter's Square and Deansgate-Castlefield in the peak hours to and from destinations such as Bury, Oldham, Rochdale, Ashton, Didsbury, Manchester Airport, Altrincham and Eccles. This offers excellent transport for staff and visitors to the site. Once the Second City Crossing completes, the number of trams across the City Centre will increase to 45 trams per hour in all directions.

1.10 Given the city centre location of the Site, pedestrian accessibility to the surrounding area is very good. Existing pedestrian links are present around the Site which leads to the primary routes towards the centre of Manchester along Liverpool Road and Quay Street. All footways in the surrounding area are lit and there are appropriate crossing facilities across all the main highways.

1.11 Cycling is an increasingly popular mode of transport and is an effective mode for short trips. There are a number of designated cycle routes and facilities in the area as well as a network of quiet streets which are convenient for cyclists. These excellent cycle links offer quality cycle routes from both Salford and Trafford to the Factory site.

Historic Environment

1.12 The Site is located with the Castlefield Conservation area and approximately 500m to the west of the St John Street Conservation Area.

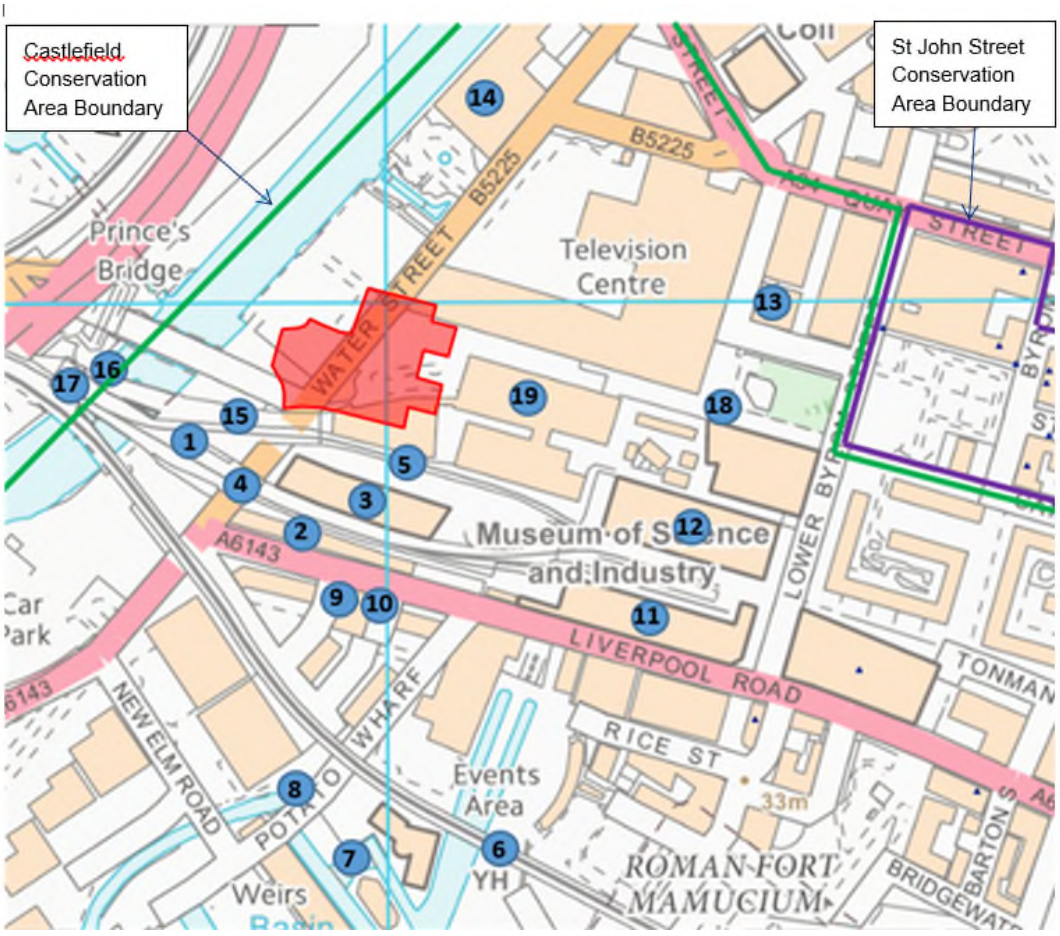
1.13 Nearby and on site listed buildings include the Colonnaded Railway Viaduct (Grade II Listed) and the 1830 Warehouse (Grade I Listed), as well as the former Liverpool Road Station Master's House (Grade I Listed) and the Railway Bridge over the River Irwell (Grade I Listed) to the south, the Museum of Science and Industry Warehouse to the east (Grade II Listed). A full list is provided in Table 2 below:

Table 2 - Designated Heritage Assets

Description (number refers to location on Figure 1.2)	Heritage Designation
1) Stephenson's Bridge	**Grade I**
2) Liverpool Road Station Building	**Grade I**
3) 1830 Warehouse	**Grade I**
4) 1830 Viaduct	**Grade II**
5) Colonnaded Railway Viaduct	**Grade II**
6) Manchester South Junction and Altrincham Railway Viaduct	**Grade II**
7) Giants Basin	**Grade II**
8) Pair of culvert arches over River Medlock and associated overflow channel	**Grade II**
9) Commercial Hotel, Liverpool Road	**Grade II**
10) 123 Liverpool Road	**Grade II**

Description (number refers to location on Figure 1.2)	Heritage Designation
11) MOSI Power Hall	**Grade II**
12) MOSI Warehouse	**Grade II**
13) Great John Street Hotel	**Grade II**
14) Victoria and Albert Warehouse	**Grade II**
15) Zig-Zag viaduct	**Grade II**
16) Girder Bridge (Salford side)	**Grade II**
17) Stephenson's Bridge (Salford side)	**Grade I**
18(Manchester and Salford Junction Canal Tunnel	**Grade II**
19) Bonded Warehouse	**Non-designated heritage asset**
20) Castlefield	**Conservation Area**
21) St Johns	**Conservation Area**

Figure 1.2: **Historical Asset Plan.**



Description of Development

1.14 The Proposed Development is fully in accordance with the adopted St. John's Masterplan and Strategic Regeneration Framework and comprises demolition of existing buildings and delivery of a

circa 13,400 sq. m. (GIA) ultra-flexible arts' space and associated public realm, access and highways' works.

1.15 The Proposed Development comprises four primary elements: the warehouse, theatre, back of house towers and foyer. In addition, new public realm will be provided.

1.16 The warehouse has a maximum capacity of 5,000; the theatre has a maximum capacity of around 1,600 (seated) or 2,300 (seated or standing).

1.17 The most unique aspect of the Proposed Development is the extent of flexibility that will be provided between the performing and making spaces, allowing for multiple variations in configuration and therefore performance possibilities.

1.18 The description of development is as follows:

"Demolition of the Starlight theatre, existing workshop and other structures and perimeter wall, removal of four existing trees, and alterations to the Grade II Listed Colonnaded Railway Viaduct, in order to facilitate the development of a new flexible arts space to be used for a range of activities including theatre, music, dance, art, other performance-related events and conferences (Sui Generis) with ancillary facilities, including retail and bar uses, offices, administrative and back of house functions, training and educational facilities, servicing and access arrangements, highways works, creation of new public realm, cycle parking, provision of new plant and associated works."

1.19 Due to the location of the Site and nature of the Proposed Development, Listed Building Consent has also been applied for as follows:

"Alterations to the Grade II Listed Colonnaded Railway Viaduct to accommodate the structural solution, entrance foyer and support facilities required in relation to a new flexible arts space, Factory Manchester"

The Environmental Impact Assessment

1.20 The Environmental Impact Assessment (EIA) process is a procedure used to determine the potential environmental effects of a proposed development. The Environmental Statement (ES) is the document containing the findings of the EIA.

1.21 Full results of the EIA process are presented within Volumes 1-2 of the ES.

1.22 Volume 1 of the Environmental Statement has been prepared by Deloitte and includes:

Table 3 - EIA Chapters

Document	Prepared By
Volume 1: Environmental Statement including: • **Introduction** • **Methodology** • **Site and Development Description** • **Consideration of Alternatives** • **Summary of Residual Effects**	Deloitte LLP
• **Construction Methodology and Programme**	Laing O'Rourke
• **Townscape and Visual Impact**	Chris Burnett Associates
• **Built Heritage**	Stephen Levrant: Heritage Architecture
• **Air Quality**	Hilson Moran
• **Noise and Vibration**	Arup
• **Wind Microclimate**	Urban Microclimate
• **Traffic and Transport**	Vectos

• **Ground Conditions**	Buro Happold
• **Water, Resources, Drainage and Flood Risk**	RoC

1.23 Volume 2 contains the Technical Appendices to support the ES.

1.24 This Statement forms the Non-Technical Summary of the technical reports.

Project Team

1.25 Details of the project team are set out in Table 4 below.

Table 4 - Technical Team

Organisation	Expertise
Manchester City Council	Applicant
Manchester Quays Limited	Development Manager
OMA	Architect
Gillespies	Landscape Architect
Our Studio	Visualisations
Hilson Moran	Air Quality
Buro Happold	Ground Conditions and Contamination, Energy
Arup	Noise and Vibration
RoC	Water Resources and Drainage
Heritage Architecture	Historic Environment
Chris Burnett Associates	Townscape and Visual Impact
Vectos	Transport
Urban Microclimate	Wind Microclimate
Salford Archaeology	Archaeology
Greater Manchester Police	Crime Impact Statement
Indigo	Arboriculture
GTech	Television Reception
ERAP	Ecology
Watts	Sunlight and Daylight
Deloitte	Planning and EIA Co-ordination

Planning Context

1.26 Throughout the design process and the EIA process, full regard has been had to Government Advice (in the form of the National Planning Policy Framework (NPPF)) and guidance set out in the relevant local planning policy documents. The application proposals have also been prepared by the project partners in consultation with Manchester City Council and a range of technical stakeholders.

1.27 A full review of the proposals against planning policy is included in the Planning Statement, which accompanies the planning application and this is summarised within the Environmental Statement.

The review concludes that the proposals are fully in accordance with adopted and emerging planning policy.

Construction Phasing

1.28 The construction programme will span a period of approximately three years.

1.29 The construction programme is divided into the following six stages:

Stage 1 – Enabling Works (22 weeks)
- Site establishment
- Demolition
- Underground Services relocations

Stage 2 – Substructure works and initial concrete structures (52 weeks)
- Sub structure works (piling and foundations externally and internally within the arches)
- Drainage
- Erection of tower cranes
- Concrete structures from ground up to the level 1 slab

Stage 3 – Structural Steel and Precast (76 weeks)
- Structural steel to the Warehouse walls
- Structural steel to the towers structures
- Precast concrete inner lining to Warehouse walls
- Precast Concrete external lining to the Warehouse
- Primary Structural steel to the Theatre
- Secondary Structural Steel to the Theatre
- Triangular precast slabs to the Theatre

Stage 4 – Roof Structure Warehouse (36 weeks)
- Structural steel roof trusses
- Technical ceiling
- Acoustic slabs
- Strand Jacking

Stage 5 - Roof and Envelope works (39 weeks)
- Insulation and single ply membrane to the Warehouse and Towers
- Insulation and single ply membrane or GRP to the Theatre
- Structure and glazing to the Warehouse gables
- Envelope/Cladding to the Towers

Stage 6 - Fit out internally (53 weeks)
- Large Acoustic Doors
- Specialist Equipment
- Lifts and escalators
- Internal partitions
- Floor wall and ceiling finishes
- Doors and glazed screens
- Mechanical Electrical and Plumbing
- Toilet fit out
- Testing and Commissioning

Stage 7 – Public Realm
- Paving and roads to all external areas including associated services

1.30 As detailed in the Construction Management Plan submitted in support of the Application, the site normal working hours will generally be 7.00am to 7.00pm Monday to Friday and 8.00am to 2.00pm on Saturdays.

1.31 On Sundays and Bank holidays noisy working will generally not be planned. On some occasions there are certain operations that maybe required to proceed during these periods, for example

tower crane erection and dismantling. These will be infrequent and will be agreed with the EHO and local residents through a series of neighbourly engagements. The frequency of these will vary and respond to demand and will be agreed in writing with the City Council.

1.32 Access to site will be permitted 30 minutes prior to working day commencing with noise being kept to a minimum for the first half hour of each day.

1.33 24 hour contact details will be displayed on the site hoarding.

Consideration of Alternative Options

1.34 The EIA Regulations require the ES to identify the alternatives that were considered during the design process. The EIA has considered the 'Do Nothing' alternative, the use of alternative sites, alternative uses and alternative designs.

The "do nothing" Alternative

1.35 The "do nothing" scenario refers to the option of leaving the Site in its current state, therefore as semi-vacant buildings, together with extensive areas of surface car parking. The Site is currently identified as a key strategic area for regeneration the Site's redevelopment is expected to bring socio-economic and regeneration benefits to Greater Manchester.

1.36 As one of the ten largest publicly funded arts organisations in the country, Factory will act as a major driver of the next stage of Manchester's regeneration – with clear cultural, economic, educational and social benefits for the city and the wider region.

1.37 The "do nothing" scenario has been discounted due to the established need for regeneration of the Site, and the potential socio-economic benefits it is anticipated to bring. The Site is considered suitable for the Proposed Development as it is previously developed and vacant land, allocated for regeneration and suitable for large-scale development.

Site Selection Context

1.38 Factory will be located at the heart of a new creative neighbourhood, St John's, in the city centre. An appraisal of possible locations elsewhere in the city centre discounted other potential locations for the Proposed Development on the basis of scale, availability, wider mix of uses and adopted policy position.

1.39 St John's has the potential to provide economic, regeneration, and employment benefits, which will contribute to wider strategic aims of the region. Its urban location, good transport links, vacant and underutilised buildings along with this ability to sustainably contribute to wider strategic aims of the city were key elements in its selection as a suitable site for mixed-use development.

1.40 Subsequently, locations within the St. John's Masterplan area were assessed against the contribution to practicability and regeneration benefits. A core development principle of the St. John's Masterplan is to retain, refurbish and re-use key heritage assets and in addition to this specific location providing the volume of space required to deliver this unique new large-scale venue, it also ensures that these assets can be retained and re-purposed in a way that creates an exceptional and distinctive sense of place. This made it an appropriate location both within the city centre and within the St John's Framework Area.

Design Evolution

1.41 The form of the Proposed Development has been influenced by a range of factors, including location, existing and proposed surrounding uses, landscape character, and technical constraints at the Site.

1.42 The Proposed Development has been developed in consultation with the Local Planning Authority, Senior Officers at Manchester City Council, Statutory Consultees, key stakeholders and adjoining owners and occupiers. As part of the consultation process, a range of stakeholders have been engaged including the following:

- Salford City Council.
- Manchester Quays Limited.
- Historic England.
- Greater Manchester Police.

- Manchester City Council Highways.
- Manchester City Council Conservation.
- Manchester City Council Access.
- Manchester City Council Environmental Health.
- Manchester City Council Flood Risk.
- Transport for Greater Manchester.
- Greater Manchester Archaeological Advisory Service.
- Local Ward Councillors.
- Castlefield Forum.
- Museum of Science and Industry.
- Network Rail.
- Local Residents and Businesses.
- Places Matter!

1.43 The operational requirements of the Proposed Development, the Site's context and constraints, the need to maximise the beneficial impact of Factory and to carefully consider its relationship to the wider masterplan phases of development were all topics of discussion with the consultation bodies listed above, which has led to a fixed design of the building that addresses their concerns raised.

1.44 In summary, Factory maximises the benefits of its City Centre location and promotes cultural innovation, growth, skills development and talent retention. It will open up connections within and through the St John's Area and create a sustainable neighbourhood with a distinctive sense of place.

1.45 As a result of the design evolution through consultation, Factory maintains linkages to the area's historic past and provides a historically-sensitive regeneration to provide multiple strategic benefits. In turn it will provide a landmark, high-quality development to showcase Manchester on the world stage and create a unique large scale, ultra-flexible arts space in collaboration with the region's leading artistic directors and curators. It has capacity for elements to be used together, or separately, with full acoustic separation; a space where the newest type of cultural and creative products can be created.

Site Layout

1.46 The layout of the Site has been influenced through consideration of its historic context and local constraints such as townscape, the surrounding built form and visual amenity, flood risk and ecology. Therefore there was limited scope for considering alternative layouts.

1.47 The position of the Proposed Development was originally located adjacent to Network Rail owned land to provide sufficient space for buildings located nearby within the adopted Masterplan. Due to the need by both Network Rail and Salford City Council to retain access to land in the vicinity of the Site for maintenance of the railway and new pedestrian foot-bridge, the position of the building was moved north and east of its original position.

1.48 In addition, this design development also enabled the Proposed Development to shift further from the highly graded Listed Buildings within the Museum of Science and Industry complex and to minimise the potential physical impact on the Grade II Listed Colonnaded Railway Viaduct.

1.49 The building has also been repositioned to maximise the benefits of the public realm. The public space to be located between the River Irwell and Water Street will receive sunlight during most hours of the day and combines with redeveloped public spaces on Grape Street to create a cohesive and comprehensive public realm strategy.

Consideration of Alternative Uses

1.50 The St. John's Masterplan adopted in February 2015 identified the Site as being suitable for a residential tower with active uses at ground floor, as part of the wider mixed-use residential led scheme.

1.51 However, following an options appraisal of the proposed location, it was concluded that the delivery of a cultural facility within this location would complement the mix of uses across the wider Site, which include workspace and retail and leisure uses, which would support the Proposed Development as well as gain from the cultural anchor it would provide for St. John's.

1.52 The Proposed Development would provide an active use that would encourage vibrancy during the day and evening and as such it has been located in part of the St. John's Masterplan that is more focused to commercial uses.

1.53 The Proposed Development will support growth, creating new jobs and opportunities to develop careers in creative and new technologies, within a key growth sector for the City Region.

1.54 For the reasons above, alternative uses were discounted as the proposed employment uses and public realm provision will provide an important asset to the local and regional community, as well as a world-class ultra-flexible arts' space that can become a major contributor to strategic growth in the North.

Environmental Impacts

Townscape and Visual Impact Assessment

1.55 The Townscape and Visual Impact Assessment examines the impact that the Proposed Development will have on the townscape of Manchester City Centre and on the townscape character of area immediately surrounding the Site. It does so in a systematic, rational and objective way using established methodologies and practices. The impact of the Proposed Development on its own is explored and then in conjunction with consented and committed development.

1.56 A computer modelling process was employed to provide an accurate series of verified wirelines and rendered images, which illustrate the impact the Proposed Development will have on a series of selected viewpoints and on the surrounding townscape on a 360 degree basis. As such, it is not possible to generalise and provide one single summary value for the impact the Proposed Development will have on Manchester City Centre as a whole as it is dependent on the location, view and the nature or the townscape under consideration.

1.57 The Proposed Development is relatively small in scale, particularly in terms of height, and has a very limited influence zone.

1.58 The relationship of the Proposed Development with nearby heritage assets, including those located within the Museum of Science and Industry is explored in more detail in the Historic Built Environment assessment.

1.59 The overriding impact of the Proposed Development on townscape is minor beneficial to negligible but with a few selected viewpoints closer to the Proposed Development where the magnitude of impact is higher and effects become moderate.

1.60 In conclusion therefore, where the Proposed Development is visible, it will be seen as a striking contribution to the surrounding townscape and one which is clearly differentiated as an example of contemporary architecture from much of the historic buildings that surround it. There are no judgements in which adverse visual or townscape effects are forecast.

1.61 In term of cumulative effect the values often become lower as the large number of tall building schemes in close proximity to the Proposed Development is taken into consideration. These include: Trinity Islands, St Johns, including St. John's Place, Central Village and Tower 1 and 2 in particular. In these cases the impact of the Proposed Development is often substantially diminished as these taller buildings, populate, interrupt or eclipse the view.

Historic Built Environment

1.62 This Chapter of the ES assesses the likely significant effects of the Proposed Development with respect to the Historic Built Environment. For the purposes of this assessment, consideration has been given to the relevant part of Manchester City centre that surrounds the Site within a 250m radius. The study area provides a focus for assessment but is not intended to be prescriptive; buildings outside the boundary of the study area are considered where relevant.

1.63 The assessment methodology for the Historic Built Environment uses established guidance, best practice and professional judgement. All receptors identified in the baseline which might be affected by the Proposed Development are given a value and the impact on them is assessed in order to give a significance of effect. Historic England guidance is also utilised for the assessment.

1.64 The assessment has identified a total of 21 no. heritage assets within the study area.

1.65 The immediate environs surrounding the former ITV Quay Street estate, as it is today, began developing following the establishment of the first of Manchester's Quay's in the late 18th century. This first quay was located at approximately the junction of Water Street and Quay Street, thus giving Quay Street its name. By the beginning of the 19th century other warehouses and wharves had been constructed and a handful of small residential roads and courts, which were interspersed with warehousing and industrial buildings, leading off Quay Street southwards into what is today the car park of the former ITV Studio.

1.66 The area surrounding the Site is distinguished by historic zones of housing, warehousing and transport. All of these zones reflect the evolving industrial character of the area: the use of brick and stone, the strong linearity of the waterways and the scale and functionality of structures such as the viaducts and bridges.

1.67 The Site, which contains the Grade II listed Colonnaded Viaduct, yields considerable heritage values as it is an integral part of the significant group of listed buildings that form the MSI site; the former Liverpool Road Station. However, due to the nature of the site, which is a gap site with no active use the area to the north of the viaduct has a negative impact on the character of the Castlefield Conservation Area.

1.68 Discussions with Historic England, alongside the characterisation appraisal of the study area, informed the selection of key views for the visual impact assessment.

1.69 Heritage assets are susceptible to numerous forms of development and non-development impacts both during the construction process and as a consequence of the operational life of the Proposed Development. The potential impact or effects in relation to the current Proposed Development have been deemed to relate to physical impacts on the Grade II listed Colonnaded Viaduct and impacts on the setting of the surrounding identified heritage assets.

1.70 In terms of mitigation, heritage considerations have been integral to the design development of the proposals. Enlisting appropriate specialists and consulting with the Local Planning Authority and Historic England has informed the design and assessment process to ensure potential adverse impact on the identified heritage assets are minimised.

1.71 The physical impact assessment has demonstrated the Proposed Development will result in limited instances of adverse impact as a result of the removal of historic fabric. The proposed development will also have a beneficial impact by introducing a new waterproof membrane to the deck level of the structure thereby preventing further deterioration of the historic fabric.

1.72 The visual impact assessment has demonstrated that the Proposed Development will result in a beneficial impact on the setting of the non-designated Bonded Warehouse and Castlefield Conservation Area and an overall negligible impact on the historic built environment. The cumulative visual impact will result in two instances of moderate adverse harm. These instances of adverse impact are in relation to the visual impact on the understanding and appreciation of the setting of the MSI complex (including views along Liverpool Road and Water Street). However, it is not considered that this impact will affect the character and appearance of the Castlefield Conservation Area as a whole. Mitigation for any perceived instances of adverse harm are accrued by the public benefits of the Proposed Development.

Air Quality

1.73 The Air Quality Assessment considers the impact of the Proposed Development during demolition and construction and operation, on local air quality and its subsequent effect on sensitive locations, such as residential properties and educational facilities. The assessment has focussed on the effect

of the Proposed Development on nitrogen dioxide and particulate matter concentrations, as the main pollutants of concern in the Manchester area.

1.74 The scope of the assessment has been derived in consideration of the Manchester Air Quality Management Area, air quality standards and limits identified in relevant legislation and planning policy requirements.

1.75 The air quality assessment has been completed in line with best practice guidelines, adopting the worst-case scenario where relevant to ensure a conservative approach to the assessment of impacts.

1.76 Impacts associated with the generation of dust during construction have been assessed following the Institute of Air Quality Management guidelines for the assessment of dust from demolition and construction. The risk of dust related impacts is established from the sensitivity of the surrounding area to impacts and the likely magnitude of dust emissions from the Proposed Development.

1.77 Air quality conditions associated with the changes in traffic volumes have been modelled for two assessment years (2017 and 2032) using a computer-based modelling package that predicts concentrations of specified pollutants based on the input of sources of the pollutants (e.g. roads and their predicted traffic volumes) and identification of representative sensitive receptors (e.g. residential properties). The results of the model have been verified using diffusion tube monitoring data from 2014 to ensure the modelling results are consistent with actual measured results within the area of influence of the Proposed Development. Impacts have then been analysed and described following best practice guidance provided jointly by the Institute of Air Quality Management and Environmental Protection UK.

1.78 Manchester City Centre falls within an Air Quality Management Area (AQMA), which was declared by Manchester City Council as annual average nitrogen dioxide levels exceeded air quality limits set through national legislation.

1.79 Monitoring of both nitrogen dioxide and particulate matter in the City Centre demonstrate a downward trend (improvement) in the annual mean concentrations of both pollutants, although some areas (e.g. Oxford Road) remain above the Air Quality Objective limit value for nitrogen dioxide. One monitoring location, Liverpool Road, falls within the area of influence of the Proposed Development, with monitoring of annual average nitrogen dioxide concentrations showing that the fell below the Air Quality Objective limit value for the first time in 2014.

1.80 Background concentrations identified by Defra have been identified, however these fall below that monitored by Manchester City Council. Predictions of future background pollutant concentrations, included in the assessment, identify that the downward trend in pollutant concentrations is expected to continue.

1.81 Although there are a number of sensitive receptors in the area of influence, only a few are located in close proximity of the Proposed Development site and as a result impacts associated with dust soiling and human health were identified as giving rise to minor to moderate adverse effects. However, due to a high number of committed developments in the surrounding area, the potential cumulative effects are likely to increase the magnitude and significance of dust impacts, which are considered on a conservative basis to cumulatively give rise to major adverse effects. Due to an absence of ecological receptors in the area of influence, impacts on these were identified as negligible.

1.82 Modelling of the changes in traffic volumes as a result of the Proposed Development demonstrates that it will result in relatively small changes in air quality in relation to sensitive receptors, with changes in relation to the majority of sensitive receptors largely being of negligible magnitude for nitrogen dioxide and particulate matter in both 2017 and 2032. However, the assessment identified six sensitive receptors in the 2017 scenario where the impact magnitude was slight, although the impact is only temporary with negligible impacts identified in the 2032 assessment.

1.83 As a result, based on the overall changes in air quality during the operational phase, relative contributions to pollutant concentration and using professional judgement, the impact on air quality

was identified as giving rise to negligible effects in both 2017 and 2032. The traffic data presented includes additional committed schemes in the area of influence, and therefore impacts in – combination with those projects are presented.

1.84 A range of mitigation measures, following best practice guidelines have been identified for incorporation into the construction methodology to minimise the generation of dust and its release from the Site. This includes a range of measures that should be incorporated into the entire development programme, such as development and implementation of a Dust Management Plan, and measures that are specific to certain aspects of the development (i.e. demolition). In order to minimise potential cumulative effects associated with dust generation, mitigation measures above and beyond that expected for the low to medium dust risk have been recommended.

1.85 Mitigation proposals for the development identified in the Transport Assessment, including the adoption of strategic and sustainable transport practices as part of a Travel Plan, will provide reductions in vehicular emissions associated with the Proposed Development.

1.86 Provided recommended mitigation measures are implemented into the Proposed Development, the significance of the predicted impacts will be reduced. The implementation of mitigation measures during the construction phase will reduce the generation of dust on site and prevent its spread off-site to nearby receptors. Consequently, the residual impacts associated with the Proposed Development are considered to give rise to negligible effects.

1.87 Implementation of the Regent Road Improvement Scheme will reduce vehicular emissions in this part of the road network, with reductions extending to adjoining roads such as Water Street through easing of congestion. Similarly, adoption of strategic and sustainable transport practices across the Proposed Development will lead to further reductions across the influenced road network. Consequently, the residual impacts are considered to give rise to negligible effects.

Noise and Vibration

1.88 This assessment considers the likely significant effects of noise and vibration arising from the Proposed Development. The temporary situation during demolition and construction works and the permanent conditions once the Proposed Development is operational are considered.

1.89 Impacts and their effects are assessed in relation to government policy and Manchester City Council's planning policies. Assessment criteria have been established using British Standards, World Health Organization (WHO) guidance and other authoritative documents.

1.90 The following impacts have been considered:

- Construction noise and vibration, including traffic on public roads.
- Noise from events within the Proposed Development.
- Building services plant.
- Deliveries and loading.
- Road traffic generated by the Proposed Development when in use.
- Noise from patrons approaching and leaving the Proposed Development.

1.91 The closest sensitive receptors that have been identified and assessed are: residential buildings (including the Castlefield Hotel) in Liverpool Road, residences in Lower Byrom Street and the Marriott Hotel in Water Street; and the Museum of Science and Industry (MSI). In addition, development of the wider St John's Masterplan area will include further residential buildings to be located closer to the Proposed Development than any of the existing residential buildings.

1.92 A noise survey has been undertaken to establish the current baseline noise levels at the closest existing residential buildings.

1.93 Construction noise and vibration has been assessed by reference to British Standard BS5228, which provides methods for predicting noise (in Part 1) and vibration (in Part 2) and for assessing their impacts and effects. The noise assessment has used the ABC Method, which considers the impacts in relation to the exiting baseline noise levels.

1.94 No significant effect of noise or vibration is predicted to the residential buildings, including hotels, in the vicinity of the Proposed Development. Local mitigation of the temporary impacts of construction noise and vibration are required to minimise residual effects at MSI. There is a temporary significant effect from construction noise identified at the MSI 1830 Warehouse.

1.95 Road traffic noise has been assessed using the Calculation of Road Traffic Noise method and the significance of changes in noise level assessed by reference to government policy and guidance derived from the Design Manual for Roads and Bridges (DMRB HD213/11).

1.96 Noise from events within the Proposed Development will be controlled by design of the building envelope. Noise impacts have been considered in relation to the proposed new residential buildings (part of the St John's Masterplan development) that will be closer to the proposed development than any of the existing dwellings. Control of low frequency ('bass') noise is part of this design requirement and will ensure no adverse effect of music noise.

1.97 Events held outdoors within the public realm will need to be managed to control noise impacts at the proposed new residential buildings. Consequently, surrounding dwellings will be protected from the adverse effects of event noise.

1.98 Building services noise will be controlled through design and noise limits to ensure that adverse impacts are avoided.

1.99 Noise from deliveries and loading of equipment associated with productions at the Proposed Development will be minimised by use of a fully enclosed service yard. Day-to-day deliveries, such as food and beverages, will be via smaller service bays and are expected to be limited to normal city centre delivery hours.

1.100 Noise from patrons will be minimised as far as practicable through the use of an Event Management Strategy, which is submitted with the planning application.

1.101 The assessment demonstrated that there will be no significant permanent residual effects of noise and vibration as a consequence of the Proposed Development.

Wind Microclimate

1.102 The wind microclimate assessment has comprised an expert qualitative review of expected pedestrian level wind conditions, based on consideration of the massing and exposure of the development in conjunction with long-term wind statistics applicable to the site.

1.103 From the climate statistics, light to moderate winds from the south and south-south-east are most common at the Site, whilst stronger winds more frequently blow from the south-south-west. Winds from the west-south-west and west also occur frequently, and extreme winds are most likely to blow from this direction. North-easterly winds are also common during spring.

1.104 The existing Site is sheltered at low level from prevailing southerly winds and conditions, both within the Site and in the immediate surrounding area, are expected to be suitable for current activities.

1.105 Upon completion, the Proposed Development will be exposed to stronger west-south-westerly winds and, at mid-to-upper levels, to prevailing southerly winds. However, the modest height of the Development and its proximity to the railway viaduct on the south side is expected to limit the potential for accelerated pedestrian level winds.

1.106 As a result, pedestrian level wind conditions in and around the site are expected to remain rated as safe for all users and the Proposed Development is thus expected to have negligible effect with respect to pedestrian safety.

1.107 In terms of pedestrian comfort, wind conditions are expected to be suitable for at least leisurely strolling and thus for pedestrian access to and passage through the Proposed Development. Away

from building corners, conditions are further expected to be suitable for short periods of standing or sitting, such as for a meeting point.

1.108 The main entrances to the Proposed Development are expected to generally enjoy suitable conditions for pedestrian ingress/egress, though the entrance near the northwest corner of the main ground floor structure may benefit from localised shelter such as a porous screen extending out from the building corner.

1.109 The Proposed Development is not expected to have any significant effect on the suitability of wind conditions within the surrounding area and ongoing development of the wider St Johns landscaping proposals is expected to alleviate potential cumulative effects of the Proposed Development and future developments.

1.110 Overall, the Proposed Development is thus expected to have a generally negligible, to no worse than localised minor adverse, effect with respect to pedestrian comfort.

1.111 No significant effects are expected during the construction phase.

Traffic and Transport

1.112 This Chapter has considered the environmental implications of additional road traffic arising from the Proposed Development and the wider St John's Masterplan area in general.

1.113 The Environmental Assessment Methodology used follows the Institute of Environmental Assessment (IEA) Guidelines which set thresholds where an environmental effect could be perceptible to a sensitive receptor. In summary, the guidance sets this threshold at a 30% increase in traffic or 10% in sensitive locations.

1.114 The environmental impact from traffic movements could give rise Severance; Driver Delay; Pedestrian Amenity; Accidents and Safety; Hazardous Loads; and, Dust & Dirt. There are other potential impacts from traffic such as Noise/Vibration, Air Quality and Heritage but these are considered elsewhere in this Environmental Assessment. A methodology for assessing these effects was established and has been applied to both the Construction Phase and the Operational Phase of development.

1.115 The existing conditions have been quantified including the existing traffic flows, speed of traffic, particularly in peak periods and the levels of queueing and recorded accidents. Transport for Greater Manchester (TfGM) have developed a traffic model for the wider area and forecast the flows at 2014 levels. This model included the traffic flows while the site operated as Granada Studios. Those flows were then factored to 2017 and 2032 levels incorporating traffic growth and the traffic from nearby committed developments. This also includes traffic that may arise from development as part of the Water Street Regeneration Framework.

1.116 The area is part of Manchester City Centre and lies close to the Inner Relief Road. As such it already experiences high traffic flows. However being within the City means that there is very good public transport provision which is expected to improve with development of the wider St John's Masterplan.

1.117 The traffic forecasts for the Proposed Development including the wider St John's development have been forecast using standard traffic forecasting methods and these have been agreed with TfGM and Manchester City Council highways officers.

1.118 The distribution of traffic on the highway network does result in a nett increase in traffic compared to the baseline situation. That increase has been quantified in percentage terms and the change in traffic is greatest at 2017 levels. The percentage impact from this nett change in traffic is then compared against the IEA Guidelines.

1.119 The implications of construction traffic have been considered. The potential impact of construction traffic on Dust and Dirt and the movement of Hazardous Loads will be mitigated through the implementation of a Construction Management Plan (CMP), which will include measures such as

wheel-washing. The CMP will establish delivery routes to and from the Inner Relief Road and via Water Street, away from sensitive residential properties. The movement of Hazardous Loads (if necessary) will be subject to risk assessment and practical measures to limit any potential harm to vulnerable road users.

1.120 The environmental impact from construction traffic to nearby residential properties is expected to be Minor Adverse when the mitigation measures are implemented. Pedestrians and cyclists would experience a Minor – Negligible impact during construction.

1.121 During operation, the Proposed Development does give rise to an increase in traffic, which could have a perceptible impact on nearby residents along Liverpool Road, for Left Bank apartments facing New Quay Street and Lower Byrom Street, as well as pedestrians and cyclists.

1.122 The assessment shows that the change in traffic flow would be perceptible for residents in these locations as they enjoy the outside areas of their properties. This would be in the form of additional vehicles driving past giving rise to a modest level of additional noise and severance arising from an extra two 2 vehicles per minute on Lower Byrom Street and around 4 vehicles per minute on Liverpool Road. This maximum change in flow occurs during the peak hours. The impact gives rise to a limited increase in traffic noise, severance when they want to cross the highway and pedestrian amenity around the residential unit. Given the City Centre nature of the location, the impact of an additional 2 or 4 vehicles per minute will only give rise to a moderate adverse impact.

1.123 There is some post event traffic activity from coach and taxis; however, the overall volumes are modest and are much less than the standard peak hour flows. This activity is also limited to around 20 minutes after an event. Visitors would be marshalled to the right locations to assist movement. A coach driver's code of conduct would ensure that engines are switched off and passengers are directed to wait on the coach before departure.

1.124 A wide range of mitigation measures are proposed that will reduce the number of journeys by private car, reduce traffic speeds and enhance road safety. These form part of a Sustainable Travel Plan Strategy covering pedestrian, cycle, public transport and sustainable car use.

1.125 These measures combine to mitigate a Moderate-Minor Adverse impact in the case of local residents to a Minor Adverse Impact. There is a Minor Negligible impact for Pedestrians and Cyclists.

1.126 In conclusion, traffic that is attracted to the Proposed Development either in its construction or operational phases will not give rise to a significant environmental impact. Traffic impacts are suitably mitigated by the package of sustainable transport measures set out within the Construction Management Plan and Framework Travel Plan, which will be secured by planning condition.

Ground Conditions

1.127 The assessment of ground conditions impact was informed by a desk study which included a review of site history and a limited historical ground investigation.

1.128 Ground conditions underlying the Site have been confirmed to consist of Glacial Till (Granular and Cohesive Strata) overlying Triassic Chester Pebble Beds (CPB) Formation (Sherwood Sandstone Group) bedrock. 'Made Ground' (material deposited or disturbed by man) is also present overlying the Glacial Till. Localised groundwater is likely to be present within the superficial deposits with the main groundwater body within the bedrock strata.

1.129 Potential sources of contamination include historical land uses, on-site car parking facilities and the presence of Made Ground. The degree of contamination arising from previous land uses is typically a function of previous site practices, operational procedures and the degree/condition of any hardstanding that may have been in place at the time.

1.130 The assessment of impacts has focussed on the suitability of the Site for the proposed land uses as well as the health and safety of construction workers.

1.131 The chemical testing information indicates that out of the 12 No. samples tested, there are no exceedances above the relevant threshold.

1.132 Based on the Site history, it is not considered that the ground conditions pose any significant risks to future users of the Proposed Development, providing suitable mitigation measures are undertaken and any 'hot spots' which may be identified during construction works are removed. This may include provision of appropriate 'clean cover' in proposed soft landscaping areas and will be based on further intrusive site investigation to be undertaken in advance of development.

1.133 Impacts associated with ground gas such as methane or carbon dioxide, if any, will be mitigated by the provision of appropriate gas protection measures in accordance with best practice guidelines.

1.134 The Site is considered to be suitable for commercial use with appropriate minor mitigation measures.

1.135 Concentrations of pollutants in the soils on Site are considered to pose a minor risk to human receptors and their property during construction, assuming appropriate health and safety controls are implemented.

1.136 In general, the use of mitigation measures such as standard construction procedures means that the risks to groundwater during the construction and operational stages can be considered to be minor to negligible.

1.137 Health impacts associated with the inhalation of ground gases, if any, will be mitigated by the provision of appropriate gas protection measures in accordance with best practice guidelines.

1.138 With all mitigation measures in place no significant impacts to human health or environmental receptors are expected to arise from the ground conditions at the Site.

Water, Resources, Drainage and Flood Risk

1.139 This chapter within the Environmental Statement has identified the likely significant environmental effects of the Proposed Developments on the surrounding area in respect of the water resources, flood risk and the wider water environment. Relevant content is drawn from the Flood Risk Assessment (Appendix 13.1) for the Proposed Development.

1.140 The Site is at potential risk of flooding from fluvial, surface water and reservoir breach sources. The Site is located in Flood Zone 2 associated with the out of bank flows from the River Irwell. The 1 in 100 year plus climate change set at 30% flood level within the Site is 26.6mAOD which affects the proposed development and the adjacent Water Street.

1.141 In general the Site slopes from northeast to southwest towards Water Street and the River Irwell beyond. When reviewing the current profile there is a single depression noted. This correlates with the identified surface water flooding extents noted on the Environment Agency drawings.

1.142 There are public sewers running within Water Street which sits adjacent to the Proposed Development and also across the development site within the former Grape Street. The various buildings which previously occupied the development site are drained to these combined sewers. This approach to the existing drainage has been discussed and agreed with United Utilities.

1.143 The River Irwell is defined through the Environment Agency's water quality classification scheme as E – "Poor".

1.144 The Site is located outside any groundwater source protection zone. The superficial deposits below the Site are defined as a Secondary A aquifer but classed as un-productive and the bedrock is defined as a principal aquifer.

1.145 During construction the likely significant effects are anticipated to be associated with combined water sewerage and watercourse water quality. These effects are all associated with the risk of construction-related materials pollutants being washed into the local sewerage system and

potentially accumulating and causing a blockage, or through overland flows following the topography of the Site eventually being discharged into a watercourse and causing environmental damage.

1.146 The likely significant operational effects generated by the Proposed Development are anticipated to be associated with surface water flooding, combined water sewerage and watercourse water quality. The nature of the Proposed Development is such that existing surface water flow paths may be changed resulting in a potential increase in flood risk elsewhere. The effect on the local combined water sewerage system is positive as it is the intention to remove all surface water flows generated by the Proposed Development. The water quality may be impacted upon because of the intention to use the land to house service yards when the Site is operational.

1.147 The following mitigation measures are proposed for use during construction and for inclusion within the Proposed Development in order to address the impacts that have been identified:

- Planning of construction activities to avoid creating areas where floodwater could accumulate, ensuring that existing surface water flow paths are not blocked and that new flow paths are not created.
- Inclusion of a new positive drainage system with efficient collection measures, which discharges in its entirety to the River Irwell.
- Maintain a regime of inspecting existing sewers within and adjacent to the Site throughout construction to check for damage and accumulation of debris. Any defects that are identified will be rectified.
- Sediment control measures, wheel washing and regular road sweeping will be put in place at all site access points to limit the amount of soil and other material that could be washed into the local sewerage system.
- Water quality will be maintained through the use of silt traps and filters, sedimentation basins, controls on vehicle refuelling, use of spill trays, regular plant maintenance to control leaks, floating oil booms and having spill kits available to contain any pollutants. Similar measures will be used to ensure groundwater is not polluted.
- The drainage strategy will result in all the surface water run-off generated by the Proposed Developments being collected via a private surface water sewerage network which will be discharged un-restricted to the River Irwell. The only limit on this discharge is in relation to velocity which must not exceed 3m/s.
- All foul water generated by the Proposed Development will be discharged at an un-restricted rate into the adjacent adopted sewer.
- All parts of the new drainage system serving the Proposed Developments must be designed in accordance with the legislation, standards, guidance and best practice applicable at the time.
- All mitigation measures to be incorporated during construction will be included in the Construction Environment Management Plan (CEMP).

1.148 The Proposed Development has impacts on the surrounding water environment. The mitigation measures proposed allow the various impacts to be addressed as far as is practicable. In some cases, a residual risk remains; however, the mitigation measures attempt to ensure that the likelihood of such an event occurring is low and that the consequences will be adequately managed to limit any impact.

Deloitte.