**SECTION 77 OF THE TOWN AND COUNTRY PLANNING ACT
1990 (AS AMENDED)**

**CALL IN INQUIRY INTO THE PROPOSED DEVELOPMENT OF THE UNITED KINGDOM HOLOCAUST MEMORIAL AND LEARNING CENTRE LOCATED WITHIN VICTORIA TOWER GARDENS, MILLBANK, LONDON SW1P 3YB**

**PROOF OF EVIDENCE OF CE NUNNS, BSc (HONS). CWEM, MCIWEM, CEnv**

**On behalf of**

**THE SECRETARY OF STATE FOR HOUSING COMMUNITIES AND LOCAL GOVERNMENT**

**TOWN AND COUNTRY PLANNING (INQUIRIES
PROCEDURE) (ENGLAND) RULES 2000**

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Contents

[1 Qualifications and Experience 3](#_Toc38036458)

[2 Introduction and Scope of Evidence 4](#_Toc38036459)

[3 Site, proposed development and flood risk policy context 7](#_Toc38036460)

[4 Environment Agency Consultation 10](#_Toc38036461)

[5 Response to Objections received by the Thorney Island Society 13](#_Toc38036462)

[6 Conclusions 17](#_Toc38036463)

# Qualifications and Experience

1. My name is Charlotte Nunns. I hold the degree of Bachelor of Science (with Honours) in Environmental Science from Lancaster University. I am a chartered member of the Chartered Institute of Water and Environmental Management and the Society for the Environment.
2. I have 19 years’ experience in the field of flood risk management. I am a Principal, Consultant at Atkins Limited a member of the SNC-Lavalin Group. Prior to joining Atkins Limited in 2008, I was the Flood Risk Lead for an independent consultancy, Environmental Protection Strategies Ltd. Prior to that I was a Development Control Engineer for 6 years at the Environment Agency.
3. I have advised a wide variety of private and public-sector clients on projects in London and throughout the UK. I have technically supported on flood risk planning matters at public inquires. These have been specifically in relation to the impact of development on flood risk to the environment and community.
4. Since joining Atkins I have been responsible for a range of projects nationally, including flood alleviation schemes, road schemes, residential and mixed-use development. My current and recent clients include Highways England, HS2, Local Authorities, the Environment Agency and Transport for London.
5. I am familiar with the Application Site and the surrounding area. I have been involved in the Application to which this call-in relates, since the original application was submitted in 2018, being technical reviewer on the Flood Risk Assessment throughout.
6. The evidence which I have prepared and provide for this call-in reference APP/X5990/V/19/3240661 in this proof of evidence is true and I confirm that the opinions expressed are my true and professional opinions.

# Introduction and Scope of Evidence

1. I am instructed by the Secretary of State for Housing, Communities and Local Government (the "Applicant") in respect of proposals for the installation of the United Kingdom Holocaust Memorial and Learning Centre (the “UKHMLC”) within Victoria Tower Gardens, Millbank, London (the “Site”).
2. As my evidence, will demonstrate, the Memorial has been designed as to not increase the risk of flooding on site, or to adjacent properties, for the lifetime of the development when taking climate change into consideration.
3. The ‘call-in’ letter identifies matters which the Minister wishes to be informed about. These include matters pertaining to policies on flood risk as set out at Chapter 14 of the NPPF.

Scope of the Applicants evidence

1. My evidence deals with flood risk technical and planning matters.
2. My evidence is set out as follows:
3. In the next section, Section 3, I describe the Site, proposed development and flood risk context and any relevant planning designations and policy context;
4. In Section 4, I summarise the consultation with the Environment Agency, leading to their removal of their objection, and their suggested conditions should planning permission be granted;
5. In Section 5, I address the comments made by objectors namely The Thorney Island Society; and
6. In Section 6, I set out my overall conclusions.
7. My evidence is also to inform the Round Table discussion at the Public Inquiry.

# Site, proposed development and flood risk policy context

Site and Proposed development

1. The proposed development at Victoria Tower Gardens (VTG), comprises several elements; the Entrance Pavilion; the Memorial Courtyard; the Holocaust Memorial; the Learning Centre (including below ground floors); the re-provision of Horseferry Playground and refreshments kiosk; and landscaping and public realm works. Further detail on the proposed development is set out elsewhere.
2. The Site is located adjacent to the River Thames, which is designated by the Environment Agency as a tidally influenced Main River. The Environment Agency are therefore a statutory consultee and competent authority in relation to Planning review on Flood Risk matters from this source. Westminster City Council, as Lead Local Flood Authority are a statutory consultee on Surface Water Drainage and Flood Risk from this source.
3. The site is located within Flood Zone 3, being at High Risk of fluvial and/or tidal flooding, however it is also within an Area Benefitting from Defences, being defended by both the Thames Tidal Barrier further downstream and the River Thames flood defence wall immediately adjacent to the eastern boundary of the site.

National Planning Policy Framework (NPPF)

1. Paragraph 155 of the NPPF (CD 1.1) states that inappropriate development in areas at a risk of flooding should be avoided by directing development away from areas at highest risk. Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flooding risk elsewhere.
2. NPPF Paragraph 157 states that all plans should apply a sequential, risk-based approach to the location of the development – taking into account the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property.
3. The purpose of the Sequential Test as outlined in the NPPF is to ensure that the chosen site is appropriate when considering flood risk and steers development to the sites at lowest risk of flooding. Detailed within Section 3.1 of the Flood Risk Assessment (CD 6.38), the development is classified as Less Vulnerable and therefore in conjunction with the location being within Flood Zone 3a, is considered acceptable, without the need for the application of the Exception Test.

Relevant Regional and Local Planning Policies

1. London Plan Policy 5.12 notes that development proposals must comply with the flood risk assessment and management requirements as set out in the NPPF and the associated Technical Guidance on flood risk over the lifetime of the development. Developments should be informed by the Sequential test and the Exceptions Test applied, if required as set out in the NPPF and the Technical Guidance, and will need to incorporate flood resilient design and emergency planning. It is important to note that the Greater London Authority (having responsibility for emergency planning) and Westminster City Council (as Lead Local Flood Authority) raise no issues in respect of flood risk.
2. Westminster City Plan (WCP) Policy S30, states in part that all development proposals should take flood risk into account and new development should reduce the risk of flooding. WCP Policy S45 notes that developments will ensure that flood-related infrastructure is protected and access for maintenance is retained.

Flood Risk Assessment Documentation and Context

1. A detailed Flood Risk Assessment (FRA), dated December 2018 (CD 5.3) was undertaken by Atkins and submitted as part of the planning application in January 2019. Following consultation with the relevant authorities and specifically in relation to comments received by the Environment Agency, the FRA was updated and this was submitted in July 2019 (CD 6.38). An addendum to the FRA was submitted in October 2019 (CD 5.4) to address the outstanding issues relating to an updated ground movement assessment and monitoring strategy and included the correspondence between the Environment Agency and the applicant.
2. The Site falls within the Environment Agency Flood Zone 3, but is protected by the River Thames flood defences, which will significantly reduce the risk of flooding on site. The Site is identified as being at low risk of surface water flooding, with an annual probability of flooding between 1 in 1000 (0.1 %) and 1 in 100 (1 %) and flood depths below 300 mm. The risk of flooding from sewers has also been identified as low.
3. The Drainage Strategy (Environmental Statement, Volume 5, Appendix L, December 2018) (CD 6.13) demonstrates that the site can accommodate surface water run-off during all events up to and including 100 year plus 40% climate change allowance. Therefore, it is considered that the Proposed Development is in accordance with national, regional and local planning policy in relation to flood risk.
4. No comments were received from the GLA in relation to flood risk. WCC confirms in its Planning Sub-Committee Report (CD 5.11) that it considers the Proposed Development is in accordance with national, regional and local planning policy in relation to flood risk, subject to the Environment Agency recommended conditions and a pre-commencement condition that would require a flood risk evacuation plan and fire escape plan to ensure early evacuation of the basement area, informed by the Environment Agency Flood Warnings.

# Environment Agency Consultation

1. Following consultation on the Flood Risk Assessment (CD 5.3), the Environment Agency initially objected to the scheme due to flood risk issues, however these issues were resolved through extensive consultation. As part of that process the FRA was updated in July 2019 and a further addendum was submitted in October 2019.
2. The EA removed its objection within its letter dated 2 December 2019 (CD5.16) and recommended conditions summarised as follows:
	1. A strategy for maintaining and improving the flood defences including a condition survey of the river wall and a scheme, to undertake any required improvements or repairs.
	2. If, additional improvements or repairs to the flood defence are found to be necessary, information detailing how these additional works will be undertaken will be provided.
	3. The ‘Proposed site plan showing vehicle access’ shall include a 16 m set back from the flood wall to ensure access routes for future wall maintenance and raising works.
	4. A Monitoring Action Plan (MAP) is undertaken to ensure that the integrity of the wall is maintained.
3. There are two defences protecting the site:
	* 1. The Thames Tidal barrier which prevents tidal flood levels inundating the site. According to the Environment Agency the “Thames Barrier and associated defence system has a 1 in 1000 years standard which means it ensures that flood risk is managed up to an event that has a 0.1% annual probability.” This long- term defence strategy is outlined in the Thames Estuary T2100 plan (CD 4.14). The risk of flooding and potential failure of the barrier is considered low and not in question by the Environment Agency or any other objector.
		2. The flood wall, which also forms part of the T2100 Plan along the eastern boundary of the site. According to the Environment Agency “The current condition grade for defences in the area is 2 (good), on a scale of 1 (very good) to 5 (very poor).” The stretch of wall between Lambeth Bridge and Westminster Bridge is defined as a critical reach of Embankment Wall, according to the draft Strategic Flood Risk Assessment, paragraph 3.2.12 (CD 4.3). It also details that the Thames Embankment and Wall (Westminster Bridge to east of Lambeth Bridge) is under the maintenance responsibility of Crown/Parliamentary Works.
4. Paragraph 2.34 of Westminster City Plan states that Westminster is also fortunate in having excellent flood defences that will be in place for at least the duration of this plan.
5. However, the primary concern of the Environment Agency is ensuring that the integrity of the flood defence wall is maintained both during construction and during the development lifetime, to ensure flood risk is not increased to the site or adjacent properties. Also, that the development does not impede access for future maintenance. Hence the EA’s recommended conditions.
6. This is also supported by Policy 5.12D of The London Plan (CD 2.1) which advises that development adjacent to existing flood defences must protect their integrity and wherever possible should be set back from the banks of watercourses to allow for the management, maintenance and upgrading of defences to be undertaken in a sustainable and cost effective way.
7. It is acknowledged by the applicant that if planning permission is approved, any works undertaken within the 16 m set back would also require a Flood Risk Activity Permit, from the Environment Agency.
8. I consider that the recommended conditions are all reasonable and pertinent to ensuring compliance with National, Strategic and Local Policies and to ensure that flood risk for the lifetime of the development when taking climate change into account, to the development and surrounding areas is acceptable. I consider that given the existing condition of the wall and the supporting survey already completed by the applicant that any additional assessment requirements could reasonably be secured by conditions.

# Response to Objections received by the Thorney Island Society

1. The following comments have been received from The Thorney Island Society (TTIS) in relation to flood risk.

TTIS comments 1 (CD 5.21) 24-2-19

1. The Thorney Island Society’s Objections to the application to build a Holocaust Memorial and Learning Centre in Victoria Tower Gardens (19/00114/FULL), Paragraph 13 “We note that VTG (Victoria Tower Gardens) lies within Flood Risk Zone 3 but that the risk of flooding from the river is reduced by the river defences. Even if the dangers of flooding from the river can be discounted, the danger of local flooding from the sewer system is real. Basements were flooded very recently during heavy rain.”

Response to TTIS comments 1

1. The Flood Risk Assessment, July 2019 Section 2.5, page 15, acknowledges that should there be a breach in the riverwall flood defence (as well as failure in the Thames tidal barrier), rapid inundation of the Holocaust Memorial Learning Centre basement areas would occur. Section 2.3 of the FRA also acknowledges the historic flooding to the site.
2. The WSP report, Ground Movement Assessment- River Thames Wall, FRA addendum, October 2019, Appendix H Section 2.3 details the construction methodology of the building and basement areas, which includes a minimum of 1.0 m depth piling into the London Clay in order to prevent the inundation of groundwater.
3. The Drainage Strategy (Environmental Statement, Volume 5, Appendix L, December 2018) (CD 6.13) demonstrates that the run-off from the development will be managed on site within the drainage system for all events up to the 1 in 100 year plus 40 % climate change flood event.
4. Therefore, groundwater and surface water flood risk on the site (including risk to the basement levels) will be managed appropriately up to the design standard (the 1 in 100 plus 40 % climate change flood event). This will also ensure that flooding to adjacent properties is not adversely affected. In the short term this would provide a reduction in surface water coming from the site into the Thames Water System, reducing the impact of any associated flooding on the sewer network.
5. In order to mitigate the residual risk to its occupants, were the basement to be flooded (from any source), a detailed evacuation procedure is recommended by the FRA to ensure early evacuation of the basement area prior to any breach of the flood defences or surface water sewerage system exceedance. This should be informed by the Environment Agency Flood Warning System. It is anticipated that an evacuation route would be possible via the higher land south of the site and heading west on Horseferry Road. Flood modelling has shown that this route would remain dry during a breach of the Thames flood walls.
6. These recommendations are in line with the Environment Agency’s advice in their letter dated 2 December 2019, which includes a recommendation that Flood Warnings and Alerts are signed up for and emergency evacuation plans are in place. They advise that this should be agreed with the Local Planning Authority and emergency planners. This is also in line with the Westminster City Council Strategic Flood Risk Assessment (May 2010), Paragraph 5.58 (CD 4.2) and Westminster City Council’s Draft Strategic Flood Risk Assessment 2019 Paragraph (CD 4.3 para 5.2.2 c).

TTIS comments 2 (CD 5.19) 15-5-19

1. TTIS Consultee Comments for Planning Application 19/00114/FULL, paragraph 8. “Further to our previous comments we note that the Environment Agency asks for an improved Flood Risk Assessment and say that it is unlikely that we would grant a flood risk activity permit for this application with the current information. We cannot find any new Flood Risk Assessment or any acknowledgement of the serious concerns of the Environment Agency”.

Response to TTIS comments 2

1. In response to the Environment Agency’s comments, the FRA was updated in July 2019 and a FRA addendum was submitted in October 2019. The Environment Agency subsequently removed its objection (letter dated 2 December 2019).

TTIS comments 3 (CD 5.20) 3-12-19

1. The Thorney Island Society’s response to the new Environmental Statement documents, submitted by MHCLG/UKHMF in October 2019.
2. “11.14 states: Section 1.6 of the FRA outlines the scope of the FRA and discusses the proximity of the development to the River Thames, consultation with the EA and the river wall (flood defence) visual condition survey. The Applicant has indicated that the development will be setback a minimum of 16m from the flood defence wall and where this isn’t the case, arrangements have been built into the design i.e. café requiring no pilings and placed on a raft circa 300 to 350mm thick. The Applicant should clarify that consultation with the EA on this solution has occurred and that it is deemed appropriate, therefore not requiring a flood risk activity permit. In terms of the flood defence survey, conclusions and recommendations have been drawn that propose patch concrete repairs to be undertaken to existing assets. If possible, the reparation of these points should be secured via a planning condition.
3. We note that one of the issues that worried the Environment Agency was the future difficulty of repairing the river wall if there is an underground structure so close to it.”

Response to TTIS comments 3

1. The Environment Agency removed its objection, being satisfied of the Flood Risk mitigation measures proposed, subject to the conditions outlined in the letter dated 2nd December 2019. This included acknowledgement of the investigation and validation of the location of the foundations of the existing wall, FRA addendum (CD 5.4), New Appendix H, Appendix J5. This detail informs the requirement of a Flood Risk Activity Permit, which is required irrespective of planning permission. It is anticipated that a Permit will be required for works within 16m such as the demountable seating area. The Environment Agency have recommended conditions (as summarised in Section 4.2 of this document) which would require further details of the patch concrete repair to be submitted and approved.

TTIS comments 4 (CD 5.29) 25-2-20

1. Statement of Case Paragraph 29 Page 10: “Despite the apparent softening in the position of the Environment Agency about flood risk, TTIS remains very concerned about this issue. This area depends wholly on the integrity of the river wall to prevent catastrophic flooding, such as occurred in 1928. The EA clearly remains concerned about the risk to the river wall and the difficulties which the building of the HMLC will cause to its ability to deal with problems. It has withdrawn its outright objection only on the basis of the imposition of onerous conditions. There can be no confidence that its managers – whoever they will be – will be able to comply with such conditions. Dealing with these critically important points by condition 11[[1]](#footnote-1) is unacceptable and there is no reason why they cannot be addressed as part of consideration of the application for planning permission.”

Response to TTIS comments 4

1. Whilst the Environment Agency was initially concerned regarding the Thames river wall, adjacent to the site, subsequent survey and analysis was undertaken and submitted within the FRA addendum, October 2019. As the competent authority, the Environment Agency has determined that the remaining issues can be dealt with by way of reasonable conditions. As defined by the Environment Agency, the conditions are required “to ensure that the structural integrity of the flood defence is not compromised”. Given the importance of the flood defence along the Thames frontage, it can be expected that the conditions will be enforced accordingly.
2. Also, the existing defence condition grade is ‘good’, and I consider that this therefore has an acceptable Standard of Protection, without requiring any immediate improvement/maintenance. Therefore, I consider that this is not a requirement that is required to be undertaken prior to development but could be reasonably undertaken during construction and operation of the site in accordance with the EA’s recommended planning conditions.

# Conclusions

1. It is my professional opinion that the development proposed is at an acceptable level of flood risk, appropriate for the usage of the site, with sufficient measures in place to mitigate any implications.
2. It is also my opinion that the development, for its lifetime, is appropriate for its location and that it is at an acceptable level of flood risk, without increasing flood risk elsewhere.
3. This is for the following reasons:
	* 1. The application of the sequential test as detailed within the FRA supports a development of this usage at this location. WCC do not contend that there is non-compliance with the sequential test.
		2. The site is at risk of flooding in a breach or overtopping of the flood wall, however its current condition is ‘good’ and the Environment Agency recommended conditions would ensure that the integrity of the wall is maintained during construction and for the lifetime of the development.
		3. A Monitoring Action Plan based upon the Monitoring Strategy, will ensure that the wall’s integrity will be maintained throughout construction and during the lifetime of the development.
		4. There are appropriate plans in place e.g. Thames Estuary T2100 Plan to ensure that the wall is maintained at the appropriate standard (irrespective of this development).
		5. The development has been designed to ensure that sufficient access can be achieved to allow the wall to be maintained and improved (where required). If required a Flood Risk Activity Permit will be acquired for additional works within 16m of the wall and/or improvement/maintenance works to the wall itself.
		6. The Environment Agency has permissive powers for maintenance of the flood wall and the riparian owner (which according to the to the draft Strategic Flood Risk Assessment, paragraph 3.2.12 (CD 4.3) is the Crown/Parliament) has responsibilities for its improvement and upgrading (to account for climate change), irrespective of this proposed development.
		7. An appropriate flood warning and evacuation procedure would be implemented as recommended by the Flood Risk Assessment, to ensure that occupants of the site can be evacuated safely. There would be adequate safe refuge and warnings to ensure that this would be achieved.
4. Through the conclusions and recommendations of the FRA, along with the Environment Agency and WCC recommended conditions, I consider that the development is compliant with the NPPF, London Plan policy 5.12, Draft New London Plan Policy SI12 and the Westminster City Plan (WCP) Policies S30 and S45.
5. My opinion concurs with that of the City of Westminster’s in that “the proposed development is in accordance with national, regional and local planning policy in relation to flood risk, subject to the recommended conditions”, (WCC Planning Sub-Committee Report, 11 February 2020, Section 9.12.3 (CD 5.11).
1. I have been unable to locate written reference to Condition 11. [↑](#footnote-ref-1)