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Structural Impact Assessment Letter

Date: 11/07/2025

To:
Planning Department
London Borough of Hillingdon
Civic Centre, High Street
Uxbridge, UB8 1UW

Re: Structural Impact Assessment Letter – Proposed Multi-Storey Hotel Adjacent to Grade II Listed Building at 233 High Street, Uxbridge, UB8 1LD

Dear Sir/Madam,

I write in my capacity as the appointed structural engineer for the proposed development at 233 High Street, Uxbridge, UB8 1LD, where the client intends to construct a multi-storey hotel adjacent to an existing Grade II listed building.

We understand the sensitivity and importance of preserving the structural integrity and historical significance of the listed structure, and this letter is to confirm that based on the current understanding of the site and proposed construction approach, the new development can be designed and constructed in such a way as to have no adverse impact on the listed building.

1. Foundation Design and Ground Interaction

The proposed building will be supported on a piled foundation system, which will transfer all structural loads to competent strata well below the influence zone of the listed building's foundations.

Key measures include:

- **Adequate offset:** Pile positions will be carefully located to ensure a safe horizontal distance from the existing foundation line.
- **Non-percussive techniques:** Piling will be undertaken using methods such as CFA (Continuous Flight Auger) or rotary bored piles to minimise ground vibration and disturbance.
- **Ground Investigation:** A full site investigation will inform geotechnical design, with settlement calculations and pile testing to validate performance.

This approach ensures no physical or mechanical interaction between the proposed foundation system and the existing listed structure.

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2. Superstructure and Load Path Independence

The proposed superstructure will consist of a reinforced concrete frame or traditional load-bearing masonry system, subject to final design development.

Regardless of the structural form:

- All vertical and horizontal loads will be internally resolved within the new building.
- The structure will be entirely self-supporting with no reliance on the listed building.
- Structural separation will be maintained throughout to avoid any unintended load transfer or bracing effect.

3. Construction Methodology and Protection Measures

- A detailed construction management plan will be prepared in consultation with the contractor, taking special care to avoid any vibration-inducing or percussive techniques near the listed structure.
- Any excavation adjacent to the listed building will include temporary support systems (e.g., sheet piling, trench boxes, or cantilevered retaining walls) to prevent ground movement or instability.
- Movement and vibration monitoring equipment will be installed at the interface zone to continuously track potential impacts during construction.
- The interface zone will also be protected through the use of physical buffers or exclusion zones, ensuring no accidental loading or disturbance to the listed fabric.

4. Basement Construction and Retained Excavation Design

The proposed hotel will incorporate a single-level basement constructed using a contiguous piled wall system, selected for its suitability in urban settings and proximity to neighbouring structures. Key features include:

- **Contiguous Bored Piles**: These will form a continuous perimeter wall, offering both temporary excavation support and permanent lateral earth retention. Piles will be socketed into suitable strata to resist soil and hydrostatic pressures.
- **Internal RC Liner Wall**: A reinforced concrete liner wall will be cast inside the piled wall for water resistance and to improve finish quality.
- **RC Basement Slab**: A reinforced concrete slab will form the basement base, designed as a ground-bearing or suspended slab depending on soil conditions. It will be structurally tied into the retaining wall to resist uplift and provide lateral stability.
- **Excavation and Support**: The excavation will be staged and supported in accordance with a temporary works design to ensure safe execution without ground movement affecting the listed building.

This methodology ensures a safe and stable basement construction with no impact to neighbouring properties.

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5. Building Control and Future Design Considerations

This letter is based on the current concept design parameters. A full structural design package will be developed and submitted for approval under Part A of the Building Regulations during the next project phase.

The future design will include:

- Full loading analysis
- Pile layout and load distribution
- Structural detailing to isolate the listed structure from all actions
- Sequencing and construction phasing plans to protect adjacent assets

All designs will be carried out in accordance with current British Standards and Eurocodes, BS EN 1990–1999 and BS 8004:2015.

6. Conclusion

In summary, the proposed multi-storey hotel will be designed and constructed to be entirely self-supporting and structurally independent of the adjacent Grade II listed building. The use of non-intrusive foundation systems, carefully managed construction techniques, and a commitment to future regulatory compliance will ensure that there is no adverse impact to the listed structure throughout the construction and operational life of the building.

Should you require further clarification or supporting information, I would be happy to assist.

Yours sincerely,
Hikmat Akhundzada
BEng, MSc, PhD, AFHEA, GIStructE
Urban Consulting Engineers Ltd