Relocation of Heritage Ottawa Registry Office Overview

*This document is intended to provide a general overview of the Ottawa Registry Office relocation only. Some approaches may change based on new information or due to engineer specifications that have yet to be finalized.

Date:	April 12, 2022	**File No.**	22060
Building Description:	Heritage Building – Ottawa Registry Office		
Building Location:	70 Nicholas St, Ottawa, ON K1N 7B9		

The following quote including scope of work and pricing are contingent upon the following requirements:

- The new foundation design is to be constructed in such a way to accept the supporting steel beams during lowering.
- The new foundation should be constructed at an elevation that compensates for the thickness of the supporting steel plus shimming. The base / caisson design is to be approved by the engineer to validate that building will be appropriately supported.
- The new location of the building should feature sufficient space to host the supporting steel and piers, as well a sufficient space to allow their removal.
- The client is to excavate area between the building's original location and its future location down to bedrock and filled with gravel pad to match new foundation elevation. (Gravel pad specs. TBD in accordance with engineer requirements)
- Insurance coverage provided by Reliance.
- Client (Reliance) to purchase/rent/supply all necessary supporting steel beams and other auxiliary materials. (Final material list TBD based on final engineered lifting plan).

Terms and Conditions:

- All designated substances to be removed prior to work commencement
- Client will allow CDS Building Movers feature branded signage on the building.
- All masonry work, including the removal of bricks for the creation of temporary holes (used for the installation of bracing or otherwise) must be completed by a third-party contractor assigned and paid by the client.
- All costs derived from third party invoices (see *Third-Party Costs* under *Compensation* section) are to be paid by client as they occur.
- CDS can assist in the acquisition of insurance coverage, however the insurance cost is to be passed on to the client. Official cost will require a special assessment by insurance provider, as available at the time of the work.

Stage 1: **Site Preparation**

1.1. Removal of all interior finishing (all non-structural elements) including interior plaster layer currently covering brick, to be completed by Reliance.

1.2. Exterior perimeter excavation (approximately 16ft wide trench at 4ft depth). Area between original location and final location (including area underneath the future location of the building) to be excavated and replaced by a granular pad of sufficient density to endure the weight of the building and its supporting steel structure. Excavation and construction of granular pads are the responsibility of Reliance.

1.3. Installation of vault-ceiling upper bracing. (Refer to associated drawing, final engineering TBD)

1.4. Installation of corner braces/cables. (Refer to associated drawing, final engineering TBD)

1.5. Removal of interior floor slabs by heritage grade. Slabs to be marked and stored by Heritage-Grade for future re-installation.

1.6. Creation of initial crosser beam holes by joint effort from CDS and Heritage Grade. The initial holes will be created on either side of the center "barrel-vault supporting walls", where the initial crosser beams are to be installed. The overhead bricks of the holes will be held up by a temporary support structure while the following steps are performed. (Refer to associated drawing, final engineering TBD)

1.7. The initial crosser beam holes will be used to partially remove the interior rubble foundation walls currently supporting the stone floor slabs. The top portion (± 5ft) of said foundation walls will be removed to allow for free-unobstructed insertion of crosser beams. The rubble will be removed largely by hand with the assistance of conveyer belts. The rubble will be stockpiled outside of the building, to be handled by Heritage Grade for conservation/re-use as desired.

1.8. Interior of the original foundation (areas between the remaining portion of interior rubble walls) is to be backfilled with granular material (likely ¾" gravel, TBD by engineer) to allow to construct a base of sufficient density to support the weight of the building and its supporting structure during movement.

1.9. Filling of window openings by external contractor. Removal of window glass (recommended)

Stage 2: **Installation of Supporting Structure**

2.1. Sequential installation of the supporting steel structure (Refer to associated drawing, final engineering TBD):

a. Installation of initial crosser beams, shored onto CDS's supporting pier system.

b. Installation of needle beams over initial crosser beams to allow for the creation of main-beam openings in the center vault supporting walls.

c. Installation of main beams, shored onto CDS's supporting pier system.

d. Creation of secondary foundation holes to allow for the installation of secondary crosser beams. Installation of final secondary crosser beams.

e. Raising of main beams to meet and join with crosser beams. The beams are to be secured together using heavy duty c-clamps.

f. Installation of final needles beams between crosser beams to complete support of remaining bricks.

Stage 3: **Initial Raise**

3.1. Installation of the unified hydraulic jacking system

3.2. Shimming/pre-load

3.3. Initial pressurization/raise to allow for even and uniform raising of the structure

- Each jacking point will be analyzed in advance to determine the expected weight at each jacking point. The positioning of each jack will be adjusted to spread the load evenly throughout the system to ensure that the deflection of the supporting steel beam structure is minimal.

3.4. Raising of building to rolling elevation

Stage 4: **On-site Rolling of The Building (First Roll)**

4.1. Removal of external foundation walls for installation of rolling beams, to be completed by Heritage Grade.

4.2. Installation of rolling beams, rollers, and hydraulic push jacks

4.3. Rolling of the building

Stage 5: **Lowering & Removal of Bracing**

5.1. Setting of building on temporary pilling structure supplied by Reliance. Key specifics yet to be determined.

5.2. Removal of bracing once new construction is completed (digging of underground parking, etc.)

5.3. Transfer of building onto permanent structure