

## 8.0 RECOMMENDED DEVELOPMENT MODEL

The earlier planning studies, the input received, and the analysis against project objectives, were then integrated in a final study that attempts to integrate the best features and concepts of the preceding studies. This is presented as a 'Recommended Development Model' and was used as the basis of the budget estimate.

It is not intended that design be limited to this planning concept. Rather, it is meant to illustrate the way that the creation of new spaces can contribute to the solution of circulation and other weaknesses in the existing building. Architectural expression of this concept is deliberately conservative – extending the existing vocabulary of simple rectilinear volumes and limited palette of materials. While the resulting unity is desirable, it is not the only approach that can be taken.

### Description

The Recommended Development Model includes the following interventions:

1. Full exploitation of all buffer spaces.
2. A two-storey addition along the east side.
3. A one-storey galleria extension to the south and a new entry pavilion close to Main Street.
4. A one-storey café addition along the south face of the building
5. A one-storey extension of the existing kitchen
6. Redevelopment of Commonwealth Square Plaza as the Art Gallery of Hamilton Sculpture Garden
7. Placement of a monumental, commissioned work of art at the south edge of the site.

Visitor circulation patterns are significantly changed in this model. The Main Street entrance becomes the main entrance. The King Street entrance and direct access from the parking garage also continue to be available to visitors. A new lobby is created centrally along the east side, and this leads directly into the Level 1 galleries through a new portal, and to the Level 2 galleries by means of a dramatic new stair and elevators. An upper lobby is created at Level 2, which contains a gallery lounge and access to a roof deck. Other public destinations, such as the café, shop, art rental, and program spaces, are all accessible on Level 1 from the galleria circulation, reaching from the Main Street to the King Street entrances.

Gallery space is increased on both levels with the largest increase in collection based exhibition space on Level 2. A new 'Drawing Cabinet' (works-on-paper study room) is created in a dramatic two-storey space created out of one of the buffer spaces. Mechanical systems are reworked and expanded to meet Class AA (ASHRAE) standards on Level 1, and Class A standards on Level 2. An environmentally controlled staging space is created on Level 1 to support changing exhibition installations.

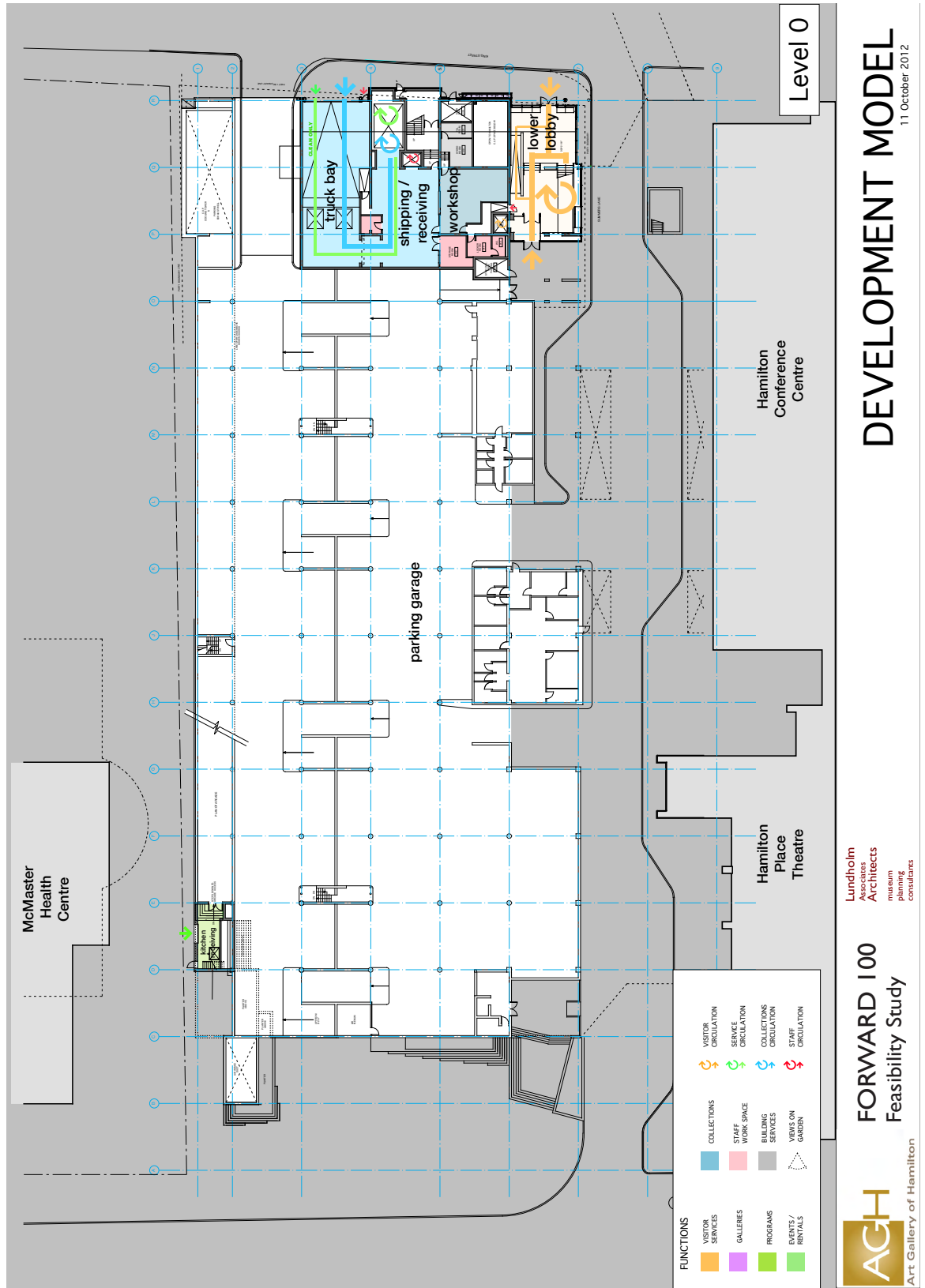
The programming studios are moved to Level 1 and equipped with glazed walls so that visitors can observe the programs in progress. These would have decorated closures for such times as light control or privacy is needed. One of three studios would be designed to facilitate participants with special accessibility needs. The existing lobby would now become a group lobby / spill space with coat facilities for school groups.

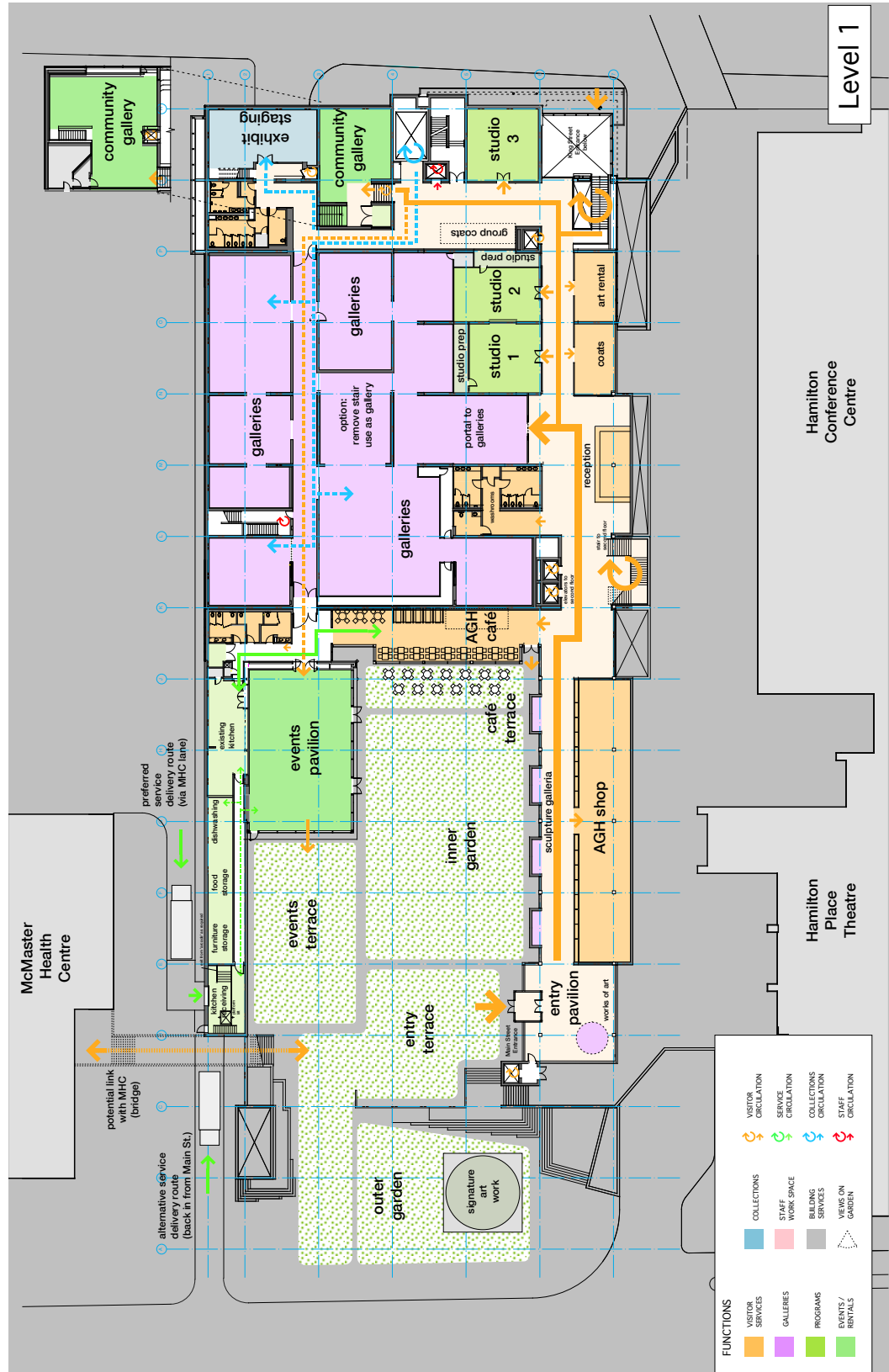
Additional collection vault space is created on Level 2 to enable rationalization of the storage, reduction in overcrowding, elimination of inferior storage in closets and loading dock, and allow for growth. Relocation of visitor circulation to the south end enables the creation of a 'back-of-house' zone for the collections, which facilitates more efficient and safe collection activity in a way that is less disruptive to visitors in the galleries. Removal of collections from the loading dock area allows restoration of shipping/ receiving space and enclosure of the workshop.

The relocation of the studios to Level 1, together with infill of the west buffer spaces, permits an expansion and consolidation of staff work space. Additional staff work space and meeting rooms is included.

The exterior area is conceived as having several zones that vary in character and use. The largest area, faced onto by the existing pavilion, new café, and new galleria, would be devoted to the new sculpture garden. The exterior events 'pad' is relocated to a similar sized space immediately south of the pavilion. Development of the southernmost part of the site would be more a public gathering space with access to the entry pavilion and provision for the iconic art piece.

Service access to the kitchen is created in the south extension of the kitchen. Truck access is either by shared use of the McMaster Health Centre service lane, or by a direct back-in lane from Main Street.





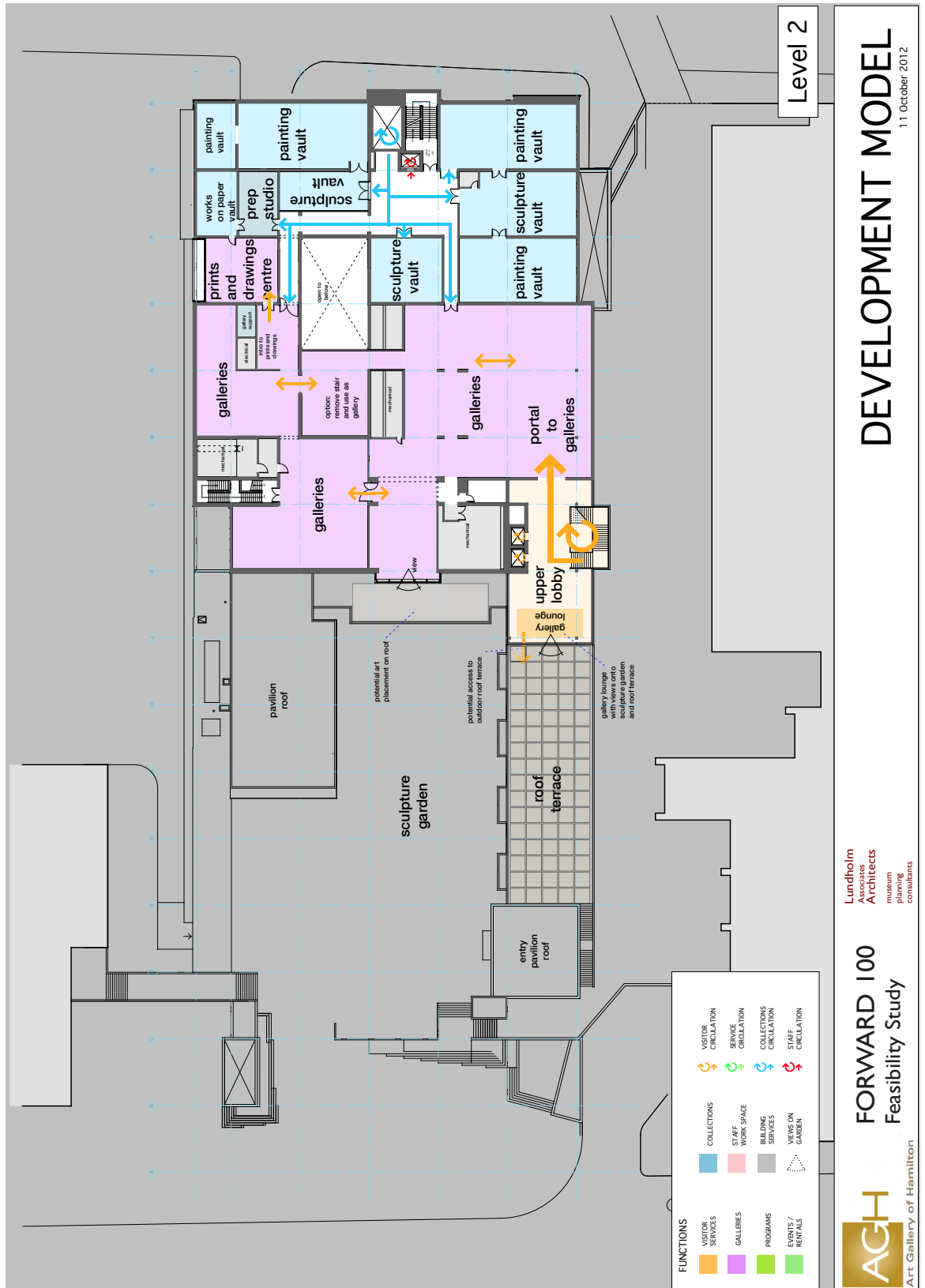
Level 1

DEVELOPMENT MODEL  
11 October 2012

Lundholm Associates Architects  
museum planning consultants

FORWARD 100  
Feasibility Study

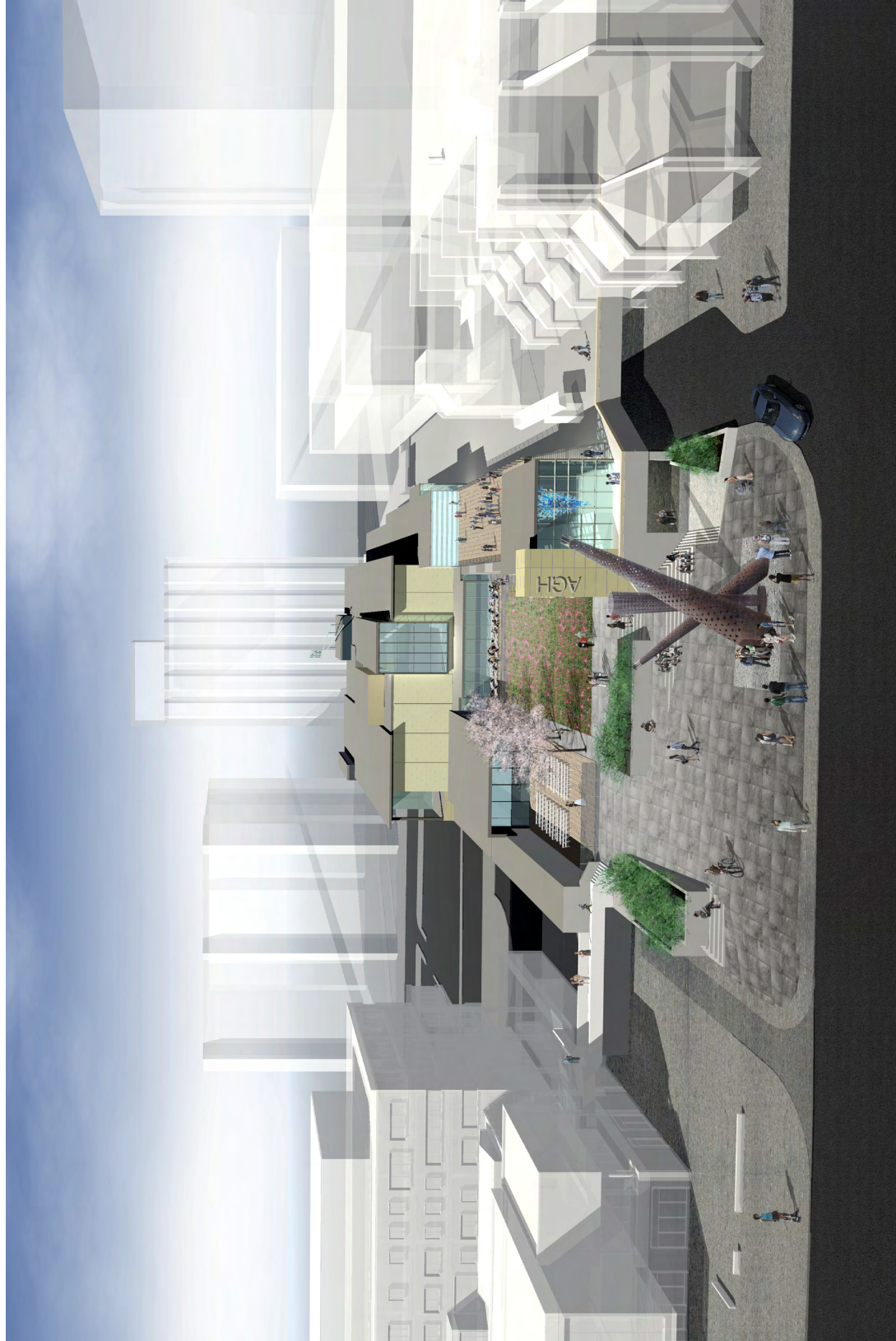
AGH  
Art Gallery of Hamilton





This elevated view is what would be seen from the upper levels of City Hall.

The art piece is a photo of artist John McEwen's installation at the Air Canada Centre titled Search Light, Star Light, Spot Light. This is used to illustrate the kind of presence and scale that is intended as an iconic part of the AGH identity. This is not meant to imply any preference for artist, medium, or style.



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Architects  
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This is a hypothetical axonometric view, showing the addition at the east side, galleria extension, and entry pavilion.



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Art Gallery of Hamilton



These (this and next page) street level views suggest what would be visible to both pedestrians and drivers on Main Street.





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Art Gallery of Hamilton

**Summary of Benefits**

| IMAGE and IDENTITY / ENTRANCE  | SCULPTURE GARDEN / ICONIC ART WORK  | GALLERY SPACE   | STUDIO SPACE   |
|--|---|---|--|
| <p>Main Street presence</p> <p>art works, garden, and entrance combine to create strong identity</p> <p>extension overcomes setback / restricted view planes</p> | <p>full potential to be a series of wonderful public spaces</p> <p>several zones with different character</p> | <p>ground floor galleries for changing exhibitions:<br/>11% increase to 12,000 sf</p> <p>Level 2 galleries for AGH collections:<br/>48% increase to 14,000 sf</p> <p>better circulation pattern on each level</p> <p>non-gallery functions largely removed</p> <p>exhibition staging space provided</p> | <p>single studio replaced with three studios of similar size</p> <p>two studios for regular programs</p> <p>one studio specialized for special accessibility requirements</p> <p>all studios in prominent location on ground floor</p> <p>location facilitates other uses</p> <p>studios served by group lobby</p> |

Summary of Benefits continued

| VISITOR EXPERIENCE   | CAFE / EVENTS /RENTALS   | COLLECTIONS<br>BACK-OF-HOUSE  | STAFF WORK SPACE   |
|--|--|---|--|
| <p>entrance from King and Main Streets connected with galleria along east side</p> <p>new lobby located centrally with stair and elevators to upper floors</p> <p>café, shop, art rental highly visible and accessible outside Gallery hours</p> <p>new café in great location with access to exterior terrace</p> | <p>café with good architectural potential</p> <p>café - kitchen relationship more efficient, less disruptive</p> <p>events support improved through expanded kitchen, well-located service access</p> <p>all present rental spaces preserved plus new roof terrace and use of café for pre-events meals</p> <p>exterior events space redefined</p> | <p>collection storage increased by:</p> <p>paintings +25%</p> <p>paper +100%</p> <p>sculpture +10%</p> <p>all collection storage organized in a back-of-house zone on one level</p> <p>collections out of poor spaces lacking environmental control</p> | <p>office space increased by 50%</p> <p>Level 3 becomes exclusive administration zone</p> <p>additional small meeting space provided</p> <p>Library preserved - reorganized as mid-size meeting space</p> <p>collection handling spaces at truck bay rationalized</p> <p>workshop reinstated</p> |

## 10.0 IMPLEMENTATION

The budget estimate is based on the assumption that the entire project (except for the commissioned art) will be tendered to a general contractor with staging requirements built into the contract. The drawing on the next page suggests a three-stage approach that would allow the Gallery to remain open for most of the construction period.

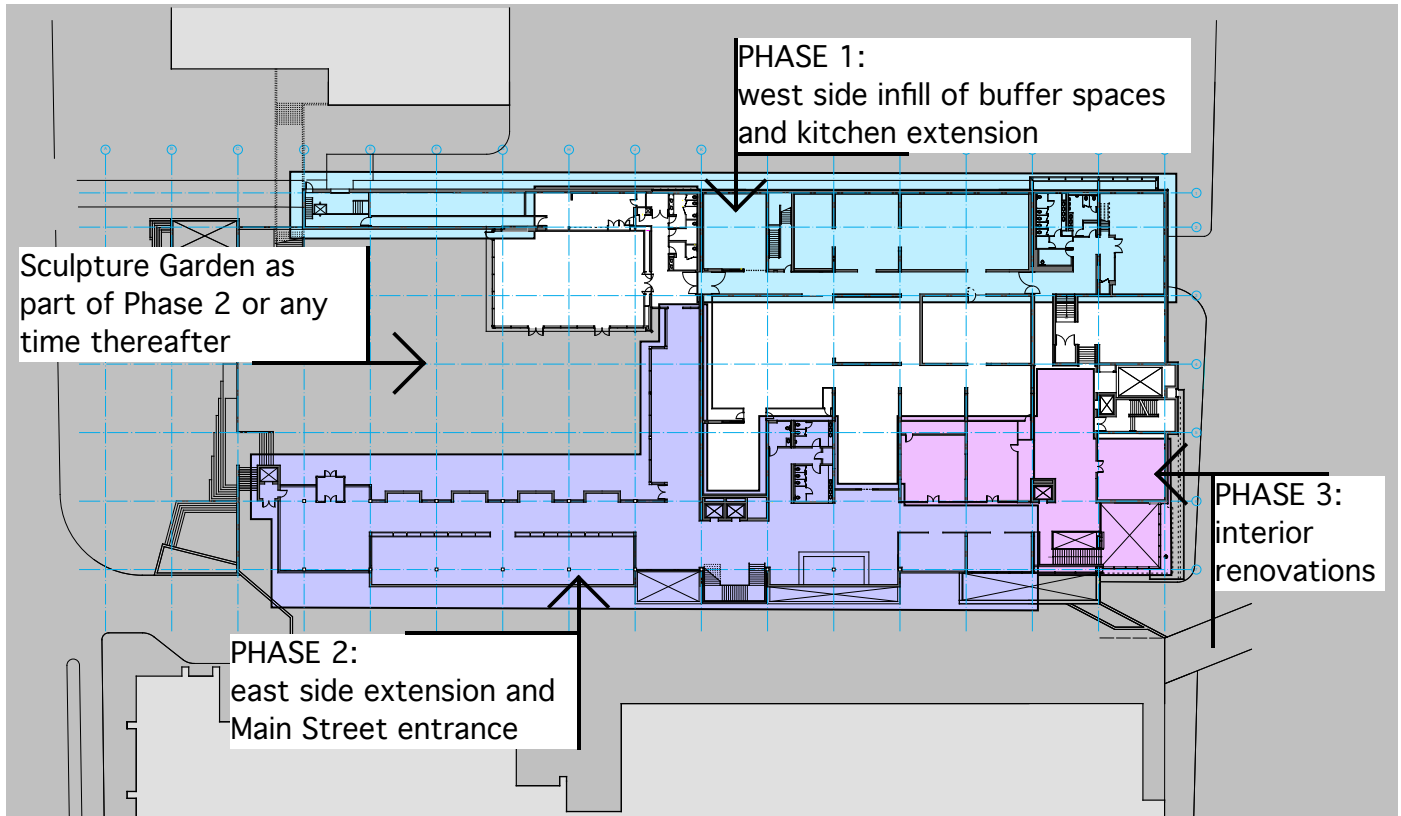
In Phase 1, the west side of the building would be vacated and closed off to permit the kitchen extension and buffer infill work to be done. Public access would be unaffected, however, the amount of gallery space available would be reduced. The pavilion and kitchen would experience some disruption.

Following completion of the west side work, Phase 2 would include the major additions of the new entrance, café, galleria, and Level 2 gallery space. The work would be contained south of the existing lobby, permitting public access to continue. Gallery space available during this phase would be somewhat reduced, but could include the new Drawing Cabinet.

When Phase 2 is complete, the public could start using the new entrance and vertical circulation. Most of the gallery space would be available. Phase 3 construction would focus on the studios and the remaining areas in and around the existing lobby.

This is a greatly simplified model. Actual staging would have to be worked out during the design stage with due consideration for continuity of life safety considerations and collection protection.

**Suggested Staging Plan**



It would also be possible to separate the work along these lines in distinct contracts separated in time. This would, however, increase costs due to loss of economy of scale and exposure to increased inflation.

## 9.0 BUDGET ESTIMATE

### Introduction

The estimate presented in this report provides an assessment of the direct construction costs for the proposed renovation, and new build additions to the Art Gallery of Hamilton.

This estimate provides an order-of-magnitude opinion of the likely construction costs. Where relevant, the estimated costs contained in this report are based on construction unit costs appropriate for this building type applied to elemental quantities generated from the drawings describing the Recommended Development Model. Where it has not been possible to generate quantities, appropriate square unit costs have been used utilizing appropriate in-house benchmark data.

Due to the nature of the design reviewed, and in order to maintain the budget parameters established in this report, it is recommended that further cost estimates be prepared at major design stage milestones to track and monitor the cost of the proposed design.

### Project Description

The project comprises the renovation of the existing Art Gallery of Hamilton building in select areas as well as the construction of four new build single and two storey additions to supplement the existing space.

The existing building was renovated in the 2005 which involved, amongst other things, the construction of a new north-west façade. The new façade was built whilst retaining the existing façade thus creating 'buffer' spaces which are currently unoccupied. The current design intent is to utilize these spaces on Levels 2 and 3 thus requiring the addition of structure and envelope to make them habitable spaces.

An additional 1,870m<sup>2</sup> of space is being provided by way of new build single and two storey buildings which will predominantly act as visitor services space in order to enhance the arrival experience of the visitor. This work involves part of the existing south-east façade being taken down to facilitate the construction of a new two-storey reception and circulation space.

Finally, the existing hard paved landscaped area will be completely overhauled to offer a more private and aesthetically pleasing space with a signature piece of artwork being placed in the public events space to the west of the building.

All existing mechanical and electrical equipment present in the renovated space will be overhauled and replaced with new, with existing infrastructure replaced to cater for any additional load requirements.

### Work Packages

The costs are presented in several 'Work Packages'. Each work package consists of one or more 'Sections', which are indicated on the following plans. Each section relates to a particular scope of work, which is either renovation or new build. The various Work Packages and associated Sections are as follows:

Package 1 – Section A  
 Package 2 – Section B  
 Package 3 – Section C  
 Package 4 – Section D  
 Package 5 – Sections H – M, O  
 Package 6 – Sections E, F, N & P  
 Package 7 – Section G  
 Site Wide – Landscaping

A brief description of each Section is as follows:

Section A – new build single storey back of house kitchen area  
 Section B – new build single storey main entrance and AGH shop area  
 Section C – new build two storey reception and circulation area and Mechanical Room on Level 3  
 Section D – new build single storey café area  
 Section E – change of use from gallery shop to studios  
 Section F – change of use from storage room to exhibition prep space and renovation of existing washroom facility  
 Section G – change of use from front of house stair to gallery space  
 Section H – minor modification work  
 Section I – change from outdoor ‘buffer’ space to indoor gallery space  
 Section J – change from outdoor ‘buffer’ space to new gallery space  
 Section K – change from outdoor ‘buffer’ space to prints/drawing centre  
 Section L – change from outdoor ‘buffer’ space to vault space  
 Section M – change from outdoor ‘buffer’ space to vault space  
 Section N – minor modification work  
 Section O – change from outdoor ‘buffer’ space to office space  
 Section P – minor modification work

## Assumptions

In preparing this estimate, we have assumed the following:

- The General Contractor will undertake the works in one continuous period with the works being sequenced (phased) in accordance with the operational requirements of the building;
- The work sections as described in the estimate are indicative and do not influence the pricing levels contained in the report;
- The building will remain in operation throughout the construction works;
- Exterior materials and interior finishes generally continue those in the existing building;
- Existing base build mechanical and electrical equipment is capable of handling the additional load unless noted otherwise in the engineering reports



**Exclusions**

The construction estimate specifically excludes the following:

- Land costs;
- Professional fees and disbursements (in project cost);
- Planning, administrative and financing costs;
- Legal fees and expenses (in project cost);
- Building permits and development cost charges;
- Temporary facilities for user groups during construction;
- Removal of hazardous materials;
- Loose furnishings and equipment (in project cost);
- Unforeseen ground conditions and associated extras;
- Off-site works;
- Costs associated with “LEED” certification;
- Erratic market conditions, such as lack of bidders, proprietary specifications;
- Cost escalation past 2Q14;
- Seismic upgrade work;
- Unforeseen existing building conditions that cannot be dealt with under the construction contingency allowance;
- Code upgrades (other than those shown on drawings or described in the specification);
- Any applicable Harmonized Sales Tax;
- Any foundation strengthening work, other than that indicated in the Structural Engineer’s report;
- Investigation survey fees (in project cost)
- Commissioned art work (in project cost)

**Taxes**

The estimate excludes Harmonized Sales Tax (HST).

**Project Schedule & Escalation**

For the purpose of identifying and quantifying an escalation allowance for this project, we have considered the following schedule:

| <b>Activity</b> | <b>Start</b>     | <b>Finish</b>     | <b>Duration Months</b> |
|-----------------|------------------|-------------------|------------------------|
| Design          | June 1, 2013     | December 1, 2013  | 6                      |
| Tender & Award  | December 1, 2013 | February 1, 2014  | 2                      |
| Construction    | February 1, 2014 | September 1, 2014 | 8                      |

Based on the above schedule, the mid-point of construction for the project is projected to be May 2014 which is 20 months from the date of this estimate.

On this basis, we have calculated the escalation for this project to be 5.07%. Current projected escalation rates are shown below. In the event that there is slippage in the schedule, further escalation based on the projected escalation rate per annum should be included in the estimate.

|                               |      |      |      |
|-------------------------------|------|------|------|
| Current BTY<br>Group Forecast | 2012 | 2013 | 2014 |
|                               | 3%   | 3%   | 3%   |

**Pricing**

The estimate has been priced at current rates taking into account the size, location and nature of the project. The unit rates utilized considers a construction management form of contract with competitively bid sub-trade pricing.

The estimate allows for labor, material, equipment and other input costs at current rates and levels of productivity. It does not take into account extraordinary market conditions, where bidders may be few and may include in their tenders disproportionate contingencies and profit margins. We have, however, taken into account the nature of the work and allowed an increased level of Contractor General Requirements and Fee than we would typically be included in order to allow for potential extensive temporary works and phasing of the works over a continuous period of time whilst the building is in operation.

**Risk Mitigation**

In order to maintain the budget parameters established in this report, we strongly recommend that further cost estimates be prepared at major design stage milestones to track and monitor the cost of the proposed design as it evolves. The major milestone estimates are typically carried out at the Program, Schematic Design, Design Development, 50% Working Drawings, 75% Working Drawings and 95% Working Drawings stages.

**Contingencies**

*Design Allowance*

A design contingency of Ten Percent (10%) has been included in the estimate to cover modifications to the program, drawings and specifications during the design. This allowance should be re-considered as the design proceeds, being ultimately reduced to zero at the tender stage.

*Construction Allowance*

An allowance of Seven and a Half Percent (7.5%) has been included in the estimate for changes occurring during the construction period of the project. This amount may be expended due to site conditions or if there are modifications to the drawings and specifications.

### Construction Cost Summary

This corresponds to the total value of the construction contract at the end of construction, but does not include other 'soft' costs. See project costs in the following section.

| Description                               | Construction Cost (\$)  |
|---|-------------------------|
| Substructure                              | 174,400                 |
| Structure                                 | 1,506,200               |
| Exterior Enclosure                        | 1,391,500               |
| Partitions and Doors                      | 198,800                 |
| Finishes                                  | 1,039,600               |
| Fittings and Equipment                    | 420,000                 |
| Mechanical                                | 2,295,500               |
| Electrical                                | 2,506,600               |
| General Requirements and Fees             | 1,620,500               |
| <b>NET BUILDING COST</b>                  | <b>\$11,153,100</b>     |
| Site Work                                 | 2,474,500               |
| Ancillary Work                            | 174,300                 |
| General Requirements and Fees             | 42,100                  |
| <b>NET CONSTRUCTION COST</b>              | <b>\$13,844,400</b>     |
| Design Allowance                          | 1,144,700               |
| Construction Allowance                    | 944,300                 |
| <b>TOTAL CONSTRUCTION COST (4Q12)</b>     | <b>\$15,933,000</b>     |
| Escalation Allowance                      | 686,100                 |
| <b>ESCALATED CONSTRUCTION COST (2Q14)</b> | <b>\$16,619,100</b>     |
| Gross Floor Area (m <sup>2</sup> )        | 4,689 m <sup>2</sup>    |
| Net Building Cost /m <sup>2</sup>         | \$2,379 /m <sup>2</sup> |
| Net Construction Cost /m <sup>2</sup>     | \$2,952 /m <sup>2</sup> |
| Total Construction Cost /m <sup>2</sup>   | \$3,398 /m <sup>2</sup> |

## Project Cost Summary

In addition to the construction cost presented in the preceding section, the Gallery will incur other 'soft costs' to complete the project. These include the following:

### *Professional Fees*

This item covers the professional fees of the design team, including the architects, landscape architects, structural, mechanical, and electrical engineers, and specialist consultants, such as lighting, acoustics, security, and A/V-IT. An allowance of 15% of the construction cost has been included.

### *Professional Advisor*

This item covers the fee of a specialist museum advisor to review the design proposals, act as specialist advisor to the design team on gallery specific issues, and generally advise the AGH on the development process. The professional advisor will also assist the AGH in setting up an architect selection process and assist with the process to select and artist for the major exterior artwork. An allowance of \$250,000 has been included.

### *Geotechnical Engineering and Testing*

The owner normally engages these services directly. An allowance of \$75,000 has been included.

### *Project Management*

The AGH intends to engage professional project management services to assist in scheduling and coordinating Gallery participation and impact on the project. An allowance of 1.25% of the construction cost has been included.

### *Legal Fees and Insurance*

Legal services are required to review contracts and advise on any require agreements with the City and third parties, such as McMaster University. Augmentation of current insurance may be required during construction. An allowance of \$50,000 has been included.

### *Furniture and Equipment*

Built-in furniture, such as the reception desk and washroom fittings, is included in the construction estimate. Additional furniture, such as café seating, lounge seating, works-on-paper study room furniture, and miscellaneous items is included as a \$500,000 allowance.

### *Collection Storage Equipment*

Existing storage shelving, compact storage, and painting rack, will be re-used, but additional equipment will be required for expanded storage space. An allowance of \$425,000 has been included.

### *Commissioned Art*

An allowance of \$1,500,000 has been included for the monumental exterior art work to be commissioned. This amount is intended to cover the artist and gallery fees, fabrication, installation, and any site preparation required. Whether it also needs to include jury fees and process costs will be determined by AGH. N allowance has been included for other interior or exterior commissioned work.

**Summary of Project Costs**

|                              |            |
|------------------------------|------------|
| Construction                 | 16,619,100 |
| Professional Fees            | 2,492,865  |
| Professional Advisor         | 250,000    |
| Geotechnical / Testing       | 75,000     |
| Project Management           | 207,740    |
| Legal / Insurance            | 50,000     |
| Furniture / Equipment        | 500,000    |
| Collection Storage Equipment | 425,000    |
| Commissioned Art             | 1,500,000  |

**TOTAL PROJECT ESTIMATE 22,119,705**

These costs are attributed to the various segments of the project according to the following table. A copy of the complete detailed cost estimate is included in the Appendix Volume II.

**Budget Estimate by Project Component**

| Element                  | Construction Cost   | Project Cost |
|--------------------------|---------------------|--------------|
| Kitchen Addition         | 756,600             | 938,737      |
| Main Street Entrance     | 2,729,700           | 3,386,822    |
| Lobby / Gallery Addition | 4,556,900           | 5,653,886    |
| Café Addition            | 987,200             | 1,224,850    |
| West Side Infill         | 2,271,500           | 2,818,320    |
| Interior Renovation      | 2,623,000           | 3,254,437    |
| Stair Infill             | 294,100             | 364,899      |
| Sculpture Garden         | 2,400,000           | 2,977,754    |
| <b>TOTAL</b>             | <b>\$16,619,000</b> | 20,619,705   |
| Commissioned Art         |                     | 1,500,000    |

**TOTAL \$22,119,705**

NOTE: project cost items applied proportionately to construction components.