



THE ICE HOUSE

HARRISONBURG, VIRGINIA

AN ADAPTIVE MIXED USE REGENERATIVE PLAN

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Michael Singer Studio

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THE ICE HOUSE HARRISONBURG, VIRGINIA

AN ADAPTIVE MIXED USE REGENERATIVE PLAN

The Ice House Complex in downtown Harrisonburg, Virginia is a unique project with the potential to have a transformational effect on both Downtown Harrisonburg and it's interconnections with the surrounding community. This Vision Study is an exploration of the numerous programmatic and regenerative possibilities for the Ice House Complex and its site. The goal of this study is to present a range of concepts and ideas rather than a prescriptive architectural solution. The ideas put forth in this packet are largely concepts generated from within the community, or ideas the community found worth exploring further.

The Ice House Complex has approximately 80,000 square feet (sq ft) of interior space (not including the basement) on just slightly over 2 acres. The entire block has a related ownership group, which is helpful for concepts effecting adjacencies. Built for ice and cold storage the Ice House Complex is a structural heavyweight, capable of handling just about any program type one can image. This size, structure, and proximity to both downtown and James Madison University (JMU) are the driving factors behind the significant adaptive reuse potential for the Ice House Complex.

Michael Singer Studio was invited to study the Ice House Complex to explore the adaptive reuse potential through programming, conceptual planning and introducing regenerative environmental strategies effecting water, ecology, and energy. This document is the product of this initial investigation, and may be followed by a more developed Conceptual Design working in tandem with local architects and engineers.

It is important to note that this study is a planning report and has not studied all potential issues associated with the existing site and facilities. In-depth, structural, civil, geotechnical, environmental and historic resource studies may need to be completed to support the concepts put forth in this document.



THE ICE HOUSE SITE CONTEXT

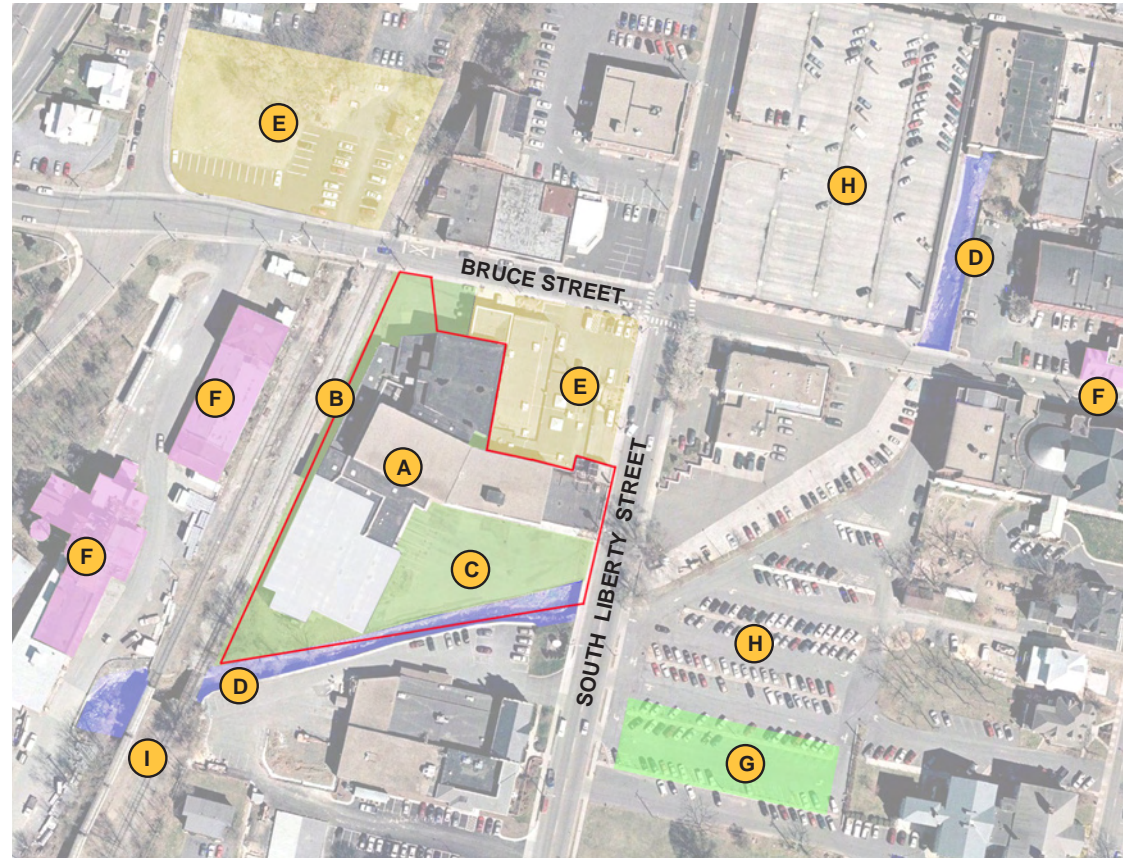
The Ice House Project Site is located at 125 West Bruce Street and 217 South Liberty Street and is slightly over 2 acres in area. The site has excellent downtown connectivity- it is approximately two blocks southwest of the Harrisonburg central business district and City Hall, and less than 6 blocks north of James Madison University's (JMU) expanding campus. The site is adjacent to multiple bus and bicycle routes (existing and planned), numerous cultural venues and historic structures, the regional Farmers Market and significant off-site parking resources.

The adaptive reuse of the Ice House Complex and the regeneration of this core downtown site has the potential to foster adjacent historic restoration and downtown economic activity. The site also has the ability to visibly and experientially connect to Blacks Run, providing a precedent for the downtown on how to sustainably manage stormwater and connect people to this urban greenway.

A small portion of the site lies within FEMA Flood Zone A due to the adjacency with Blacks Run, but most of the site is within Flood Zone X. According to the City's maps, a 100 year flood event may reach the Liberty Street Frontage of the Ice House but most flood events will typically only inundate the southern edge of the site along Blacks Run.

IMMEDIATE CONTEXT

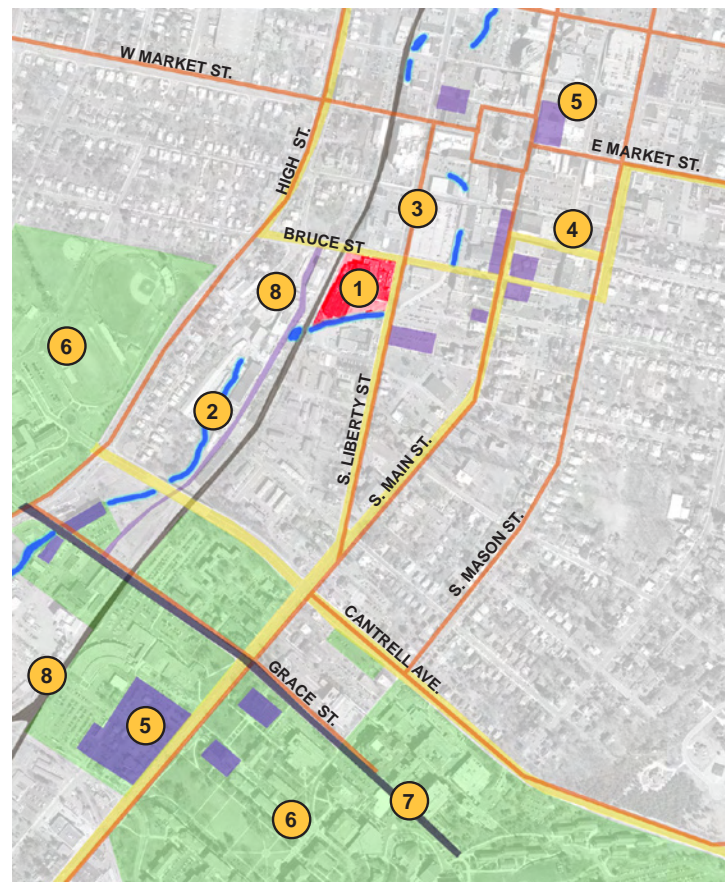
- A** THE ICE HOUSE COMPLEX
- B** PROPERTY LINE
- C** OPEN SPACE WITHIN PROPERTY
- D** DAYLIGHTED SECTIONS OF BLACK'S RUN
- E** ASSOCIATED PROPERTY
Open land north of Bruce Street may support up to 100 spaces of surface parking
- F** NOTABLE HISTORIC STRUCTURES
Thomas Harrison House (1750), historic train depot
- G** FARMERS MARKET LOCATION
(Aerial photograph not up-to-date)
- H** PUBLIC PARKING
3 to 10 hour free parking, leasable top deck spaces
- I** RAILROAD
Intermittent, slow freight use only



Above: aerial / survey composite 1"=200' Below: context map, not to scale

EXTENDED CONTEXT

- 1** THE ICE HOUSE SITE
- 2** DAYLIGHTED SECTIONS OF BLACKS RUN (blue)
- 3** EXISTING OR PLANNED BIKEWAYS (orange)
- 4** EXISTING BUS SERVICE LINES (yellow)
- 5** CULTURAL / REGIONAL ATTRACTIONS (purple)
JMU Performing Arts Center, theaters, galleries, farmers market
- 6** JAMES MADISON UNIVERSITY (green)
- 7** GRACE STREET CORRIDOR (dark gray)
- 8** CHESAPEAKE ARTS DISTRICT CORRIDOR
Long-term concept only, currently an operational lumber yard
- 8** RAILROAD (light gray)
Intermittent, slow freight use only



Above, an aerial perspective of downtown Harrisonburg, Virginia looking east. The Ice House Complex is highlighted in red.



Zones and Phasing Diagram. Floor plan and survey composite, scale 1"=100'

BUILDING ZONES

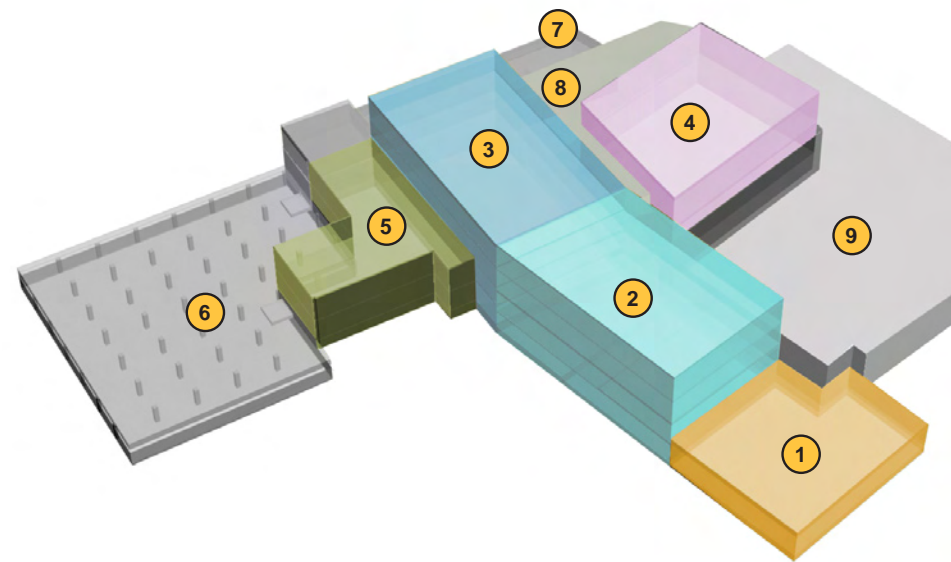
- ① LIBERTY STREET FRONTAGE
4,000 sq ft, 1 floor, built circa 1934
- ② ICE HOUSE EAST
5,900 sq ft per floor, 4 floors, built circa 1937-1948
- ③ ICE HOUSE WEST
6,700 sq ft per floor, 4 floors, built circa 1937-1948
- ④ "THE BLOCK"
6,000 sq ft per floor, 2 double height floors, built circa 1963
- ⑤ "THE ANNEX"
4,000 sq ft per floor, 2 floors, built circa 1963
- ⑥ "THE DECK"
14,000 sq ft, grade and 1 deck level, built circa 1951-1967 as warehouse
- ⑦ REAR CIRCULATION
4,000 sq ft covered ramp and loading dock, 1 level, built circa 1966-1977
- ⑧ REAR OFFICES AND EQUIPMENT AREA
6,800 sq ft, on 1-3 levels, built circa 1963-1977
- ⑨ ADJACENT PROPERTIES
205 South Liberty, 125 West Bruce Street, related property ownership group

THE ICE HOUSE BUILDING ZONES AND HISTORY

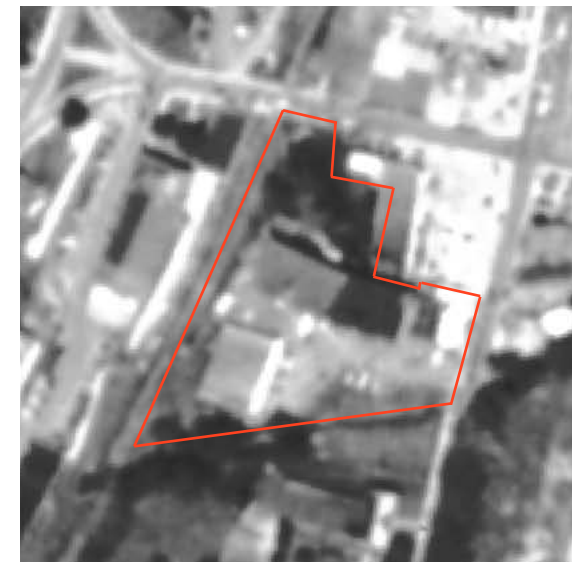
The Ice House Complex evolved piecemeal as a facility over the course of many decades, likely due to increased demand for cold storage space and improved technology. The base historical information shown on this page is a compiled from historical aerial photos and the 1998 Draft Phase 1 Environmental Site Assessment by Environmental Resources Management (ERM). In some cases the historical dating of the facilities is contradictory and should be further researched with the local historical society to obtain more finite dates as the project moves forward. It can be concluded however, that the Ice House Complex may be considered as a series of buildings within a site, and may be divisible for the purposes of both adaptive reuse, and as deemed advantageous for historical renovation purposes.

The square footages (sq ft) shown are approximate and based on previous studies by Frazier Associates. There is approximately 80,000 sq ft of interior space in the Ice House Complex. The unimproved and flood prone basement space was not a part of the site visit and is not considered for the purposes of this report.

For the purpose of clarity in identifying locations throughout this document the Ice House Complex has also been divided into building 'zones' and given names.



1937 Aerial Photo



1951 Aerial Photo



1966 Aerial Photo



CONSTRAINTS

LACKING NATURAL LIGHT

Built for functionality as a cold storage warehouse, the Ice House has very few windows and virtually no natural light. This single most significant constraint is a design challenge more than a permanent limitation; concepts on the following pages will demonstrate how natural light may be introduced into most interior spaces.

PARKING CONVENIENCE

While there are numerous on and off-site parking possibilities, some of the parking may not seem as convenient as drivers are accustomed to in the region. As an urban living/ working development this constraint is viewed to have a limited impact, and may in-fact promote greener living such as bike and bus use, car share programs and downtown centered living.

BALANCING HISTORY AND FUNCTION

The historic brick facades of the main Ice House and the Liberty Street Frontage present a unique challenge to maximize natural light and ventilation, and interior function, while preserving the historic character of the facades.

BUILDING IRREGULARITY AND LEVEL CHANGES

The Ice House has numerous interior and exterior level changes and a number of irregular built conditions, likely due to the phased expansion of the facility over many decades. Most of these issues are considered to be minor and may be handled with careful planning and design to ensure accessibility.

OPPORTUNITIES

STRUCTURE BUILT FOR ICE - FLEXIBILITY

The Ice House is structured for heavy storage with massive concrete columns and floor plates. The various interior walls and insulation panels are believed to be mostly non-structural and therefore offer a great deal of interior flexibility for building programming.

HISTORIC RENOVATION - ADAPTIVE REUSE

Creative adaptive reuse of the Ice House may be able to obtain tax credits on 25% of eligible expenses through the Virginia Rehabilitation Tax Credit Program and an additional 20% credit through the Federal Rehabilitation Tax Credit Program. This type of adaptive reuse is also a core green building practice as it utilizes existing materials and embodied energy (energy already expended to create the building).

ASSOCIATED PROPERTIES

The Ice House property is held by a related property ownership group that owns the rest of the block and associated structures- allowing for shared use and design opportunities that may not otherwise be possible. This includes the parking lot across Bruce Street (see p. 3).

CONNECTIVITY AND PROGRAM INTERCONNECTIONS

Situated centrally between downtown and the expanding JMU campus, the Ice House Complex is perfectly situated as a catalyst for urban living and program connections between JMU and downtown.

GREEN BUILDING

Due to the adaptive reuse and urban connectivity of the Ice House Complex likely already qualifies for approximately 50% of the points needed to obtain LEED certification, making this project an ideal candidate for showcasing urban sustainable development.

SITE REGENERATION

The adjacencies of Blacks Run, the Farmers Market and downtown make this site a highly visible anchor for urban environmental and economic regeneration.

OFF-SITE PARKING

The parking lot across Bruce Street from the Ice House site, as well as nearby on and off-street public parking allows for the site to incorporate landscape amenities rather than maximizing on-site surface parking.

THE ICE HOUSE OPPORTUNITIES AND CONSTRAINTS

Overall the Ice House presents many wonderful opportunities for creative adaptive reuse, and the known constraints are limited and manageable through thoughtful planning and design. This page provides an overview of the main opportunities and constraints unique to the Ice House Complex. It is important to note however that this study is a planning report and has not studied all potential issues associated with the existing site and facilities. In-depth, structural, civil, geo-technical, environmental and historic resource studies may need to be completed to support the concepts put forth in this document.



The previous function of the Ice House offers both opportunities and constraints for consideration. The massive structure of the buildings offers tremendous interior flexibility and unique spatial conditions. However, the facility layout was never designed for natural light or habitation, and therefore requires some significant design interventions to maximize interior use on all floors.

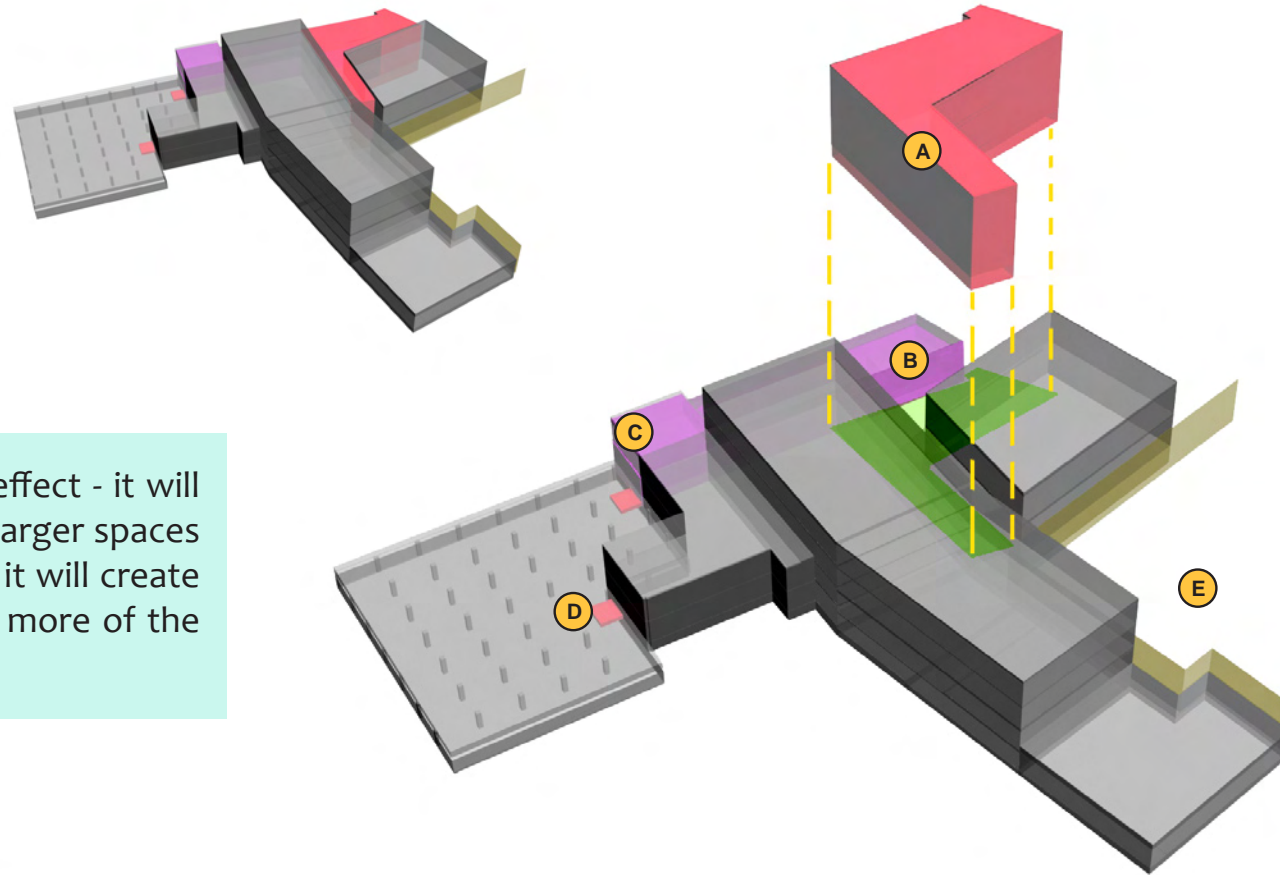


It is understood that numerous conversations have been conducted between the property owners and the Virginia Department of Historic Resources regarding the Ice House Complex and the Historic Rehabilitation Tax Credit Program. Based on these previous discussions it has been noted that the primary historic facades are the brick (and limited stucco) facades associated with the earlier structures- notably the Liberty Street Frontage (above left) and the Ice House East and West (above right) . To become habitable for any regular use such as housing or offices, the historic brick facades of the Ice House will need to be punctured with windows to allow for natural light and ventilation. This critical issue is explored further in following sections of this document.

THE ICE HOUSE

THE BIG MOVE

The Big Move will have a multi-fold effect - it will allow for more natural light into the larger spaces and thus more usable interior space, it will create more green space and it will expose more of the historic brick facades.



During site visits Michael Singer Studio suggested the possibility of modifying the Ice House Complex to maximize the functionality of the larger interior spaces by removing some of the less usable, smaller, support spaces. This concept, referred to as 'The Big Move' proposes to cut away the Rear Offices And Equipment Area (A, as shown in red, left and below)- approximately 6,800 sq ft, on 1 to 3 levels, built circa 1963-1977. This area proposed for demolition appears to be one of the more recently constructed areas, and potentially structurally unrelated (or only minimally related) to the adjacent main Ice House and The Block. The Big Move will have a multi-fold effect - it will allow for more natural light into the larger spaces and thus more usable interior space, it will create more green space and it will expose more of the historic brick facades. It may also be possible to keep some of the structural elements in this area intact as a part of a unique post-industrial aesthetic for the landscape and Bruce Street entry.

In addition to the demolition of the Rear Offices And Equipment Area the Rear Circulation area (B, shown left and below) is proposed to be significantly modified to allow for vehicular access from Bruce Street to enter the covered drive and access the back of Ice House West as well as park on the top of The Deck to the south. Significant modification of the loading dock ramp is required to accomplish this new access to on-site parking but the west facade and roof structure could remain intact as part of a covered driveway. The 2nd floor of the Annex (C, shown left) may require modification for vehicle clearance.

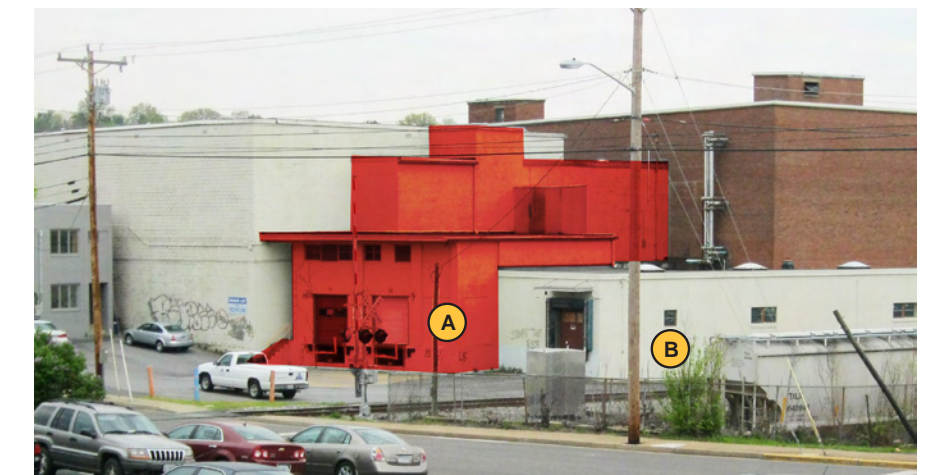
The dates and historical significance of the areas proposed for demolition or significant modification must be further researched and analyzed prior to any design effort on this concept. This research may also reveal defined historic areas that will help guide the phasing of the project relative to the Historic Tax Credits. For example, It may be advantageous to restore the Liberty Street Frontage and Ice House East and West in phase 1 and leave The Block and The Annex for later phases.



Demolition and Modification Diagram. Floor plan and survey composite, scale 1"=100'

MAJOR BUILDING MODIFICATIONS

- A** REAR OFFICES AND EQUIPMENT AREA
6,800 sq ft, 1-3 levels, built circa 1963-1977, proposed for demolition
- B** REAR CIRCULATION
4,000 sq ft driveway and loading areas, 1 level, built circa 1966-1977 proposed for significant modification
- C** 2ND FLOOR ANNEX
A small section of the second floor Annex may require modification or demolition for vehicle clearance below.
- D** "THE DECK"
With access from Bruce Street, The Deck may be utilized to park up to 34 vehicles on the upper level depending on structural analysis. Demolition of the existing loading dock areas (red squares shown left and above) will help to maximize parking.
- E** ADJACENT PROPERTIES
Access and parking along Bruce Street, and the space between the two properties are easily addressed due to the related ownership of both sites.
- F** HISTORIC BRICK FACADES AND WALLS
The Big Move will help to expose more of the historic brick walls (shown left in orange) of the original Ice House structure.



Above, the proposed area for demolition (A) will open up the possibility for a beautiful entry landscape between the two main building masses. The Rear Circulation drive (B) could remain intact as a covered driveway leading to The Deck at the south end of the site.

OPTION 1 scale 1"=80'



GROUND FLOOR AND LANDSCAPE

- RESTAURANT / CAFE (see p. 12)
2,000 sq ft in opt 1, up to 4,000 sq ft in opt 3
- ARTISAN SPACE / DESTINATION COMMERCIAL (see p. 11)
2,600 sq ft in opt 1, up to 4,000 sq ft in opt 2 and opt 3
- CULINARY ARTS COMMUNITY KITCHEN (see p. 12)
Shown as a range between 2,300- 3,000 sq ft
- OPEN OFFICE SPACE (see p. 13)
Shown as approximately 2,000 sq ft in all options, may be expanded
- GALLERY SPACE (see p. 11)
Shown as a range between 2,300- 3,000 sq ft
- FLEX SPACE - MULTIPURPOSE (see p. 13)
5,800 sq ft, event space/ music venue, long-term use likely office
- AQUAPONIC FACILITY (see p. 14)
4,000 sq ft, 1-2 levels possible
- CIRCULATION AND SUPPORT SPACES
Cream indicates general circulation, gray is support- bathrooms, storage, office
- HISTORIC WALLS
Orange indicates walls that likely have historical value
- LANDSCAPE AND EXTERIOR CIRCULATION
Paved and building areas are modified to maximize exterior spaces, interior natural light with views, and landscape areas.

THE ICE HOUSE PROGRAM OVERVIEW GROUND FLOOR

The ground floor of the Ice House Complex is open to numerous configurations and programmatic possibilities after The Big Move demolition and modifications are enacted. Three potential options are presented as viable conceptual layouts on this page to give a sense of the possibilities.

OPTION 1: The Liberty Street Frontage is split between artisan space and a small cafe. The cafe utilizes the community kitchen and the aquaponics facility. The gallery and office spaces are entered from Bruce Street as is The Block space and circulation to upper floors.

OPTION 2: The Liberty Street Frontage is designated as all artisan space and is associated with the gallery in Ice House East. In this option the community kitchen located near vehicular circulation and is more suited for catering, co-packing with the Farmer's Market and connections to the aquaponics facility.

OPTION 3: This option proposes a large restaurant-cafe along Liberty Street, again with use of the shared kitchen facility as in Option 1. The artisan programs are located in a new Annex facility near the gallery space in Ice House West.

PARKING, CIRCULATION AND LANDSCAPE (Applies to all options)

- 1 BRUCE STREET VEHICULAR ENTRY
Potentially viable for two-way traffic with permeable paved loading area
- 2 REAR CIRCULATION - COVERED DRIVEWAY
Modification of existing ramps to allow for access to The Deck
- 3 BRUCE STREET ENTRY LANDSCAPE
New landscape area and access, possible sculpture garden associated with gallery
- 4 "THE DECK"
Up to 34 parking spaces on upper level, depending on structural analysis. Potential parking on lower level will require structural analysis/ modification to maximize spaces
- 5 GARDEN TERRACE ALONG BLACKS RUN
Terraced landscape may provide access to Blacks Run, riparian edge regeneration
- 6 ENTRY LANDSCAPE
Landscape designed with 5% slope walks (max) to allow ADA access to multiple building entries at the level of current loading dock access points.
- 7 BRUCE STREET ON-SITE PARKING
8-10 parking spaces including handicapped designated spaces.
- 8 LIBERTY STREET ENTRY AND PARKING
10-12 parking spaces including handicapped designated spaces.

OPTION 2
scale 1"=100'



OPTION 3
scale 1"=100'



PROGRAM OVERVIEW UPPER FLOORS



- 1 THE BLOCK EVENT SPACE (open to below)
Flexible double height interior space, suitable as a music venue or long-term as an office and conference space.
- 2 VERTICAL CIRCULATION
Stairs for The Block, fire stair for Ice House West, core circulation and single elevator in Ice House East (supports entire Ice House Complex)
- 3 LOFT APARTMENTS (see p. 10)
Range of sizes shown, 1 bedroom typical, double height lofts in The Block
- 4 CIRCULATION
Double loaded corridor shown to maximize unit count
- 5 STORAGE OR SUPPORT USE
Gray areas shown where natural light is not available
- 6 SHARED GYM
Gym facility similar to Urban Exchange, may be a shared gym for office users, artisans and other occupants of the Ice House Complex.
- 7 "THE ANNEX" 2ND FLOOR
Potential expansion of ground floor Annex program, possible additional apartments, or 2nd floor Annex could be removed.
- 8 ROOFTOP GARDEN ACCESS
2nd floor east side apartments could open out onto the roof of the Liberty Street Frontage space, offering a unique amenity for those units.
- 9 THE BLOCK LOFTS (partially open to below)
Loft units in The Block offer double height spaces that may be rented / sold at a premium compared to units in Ice House East and West.
- 10 CONNECTOR BRIDGE
An exterior or enclosed bridge connects elevator access to The Block 2nd floor
- 11 HISTORIC WALLS
Orange indicates brick exterior walls that have historical value

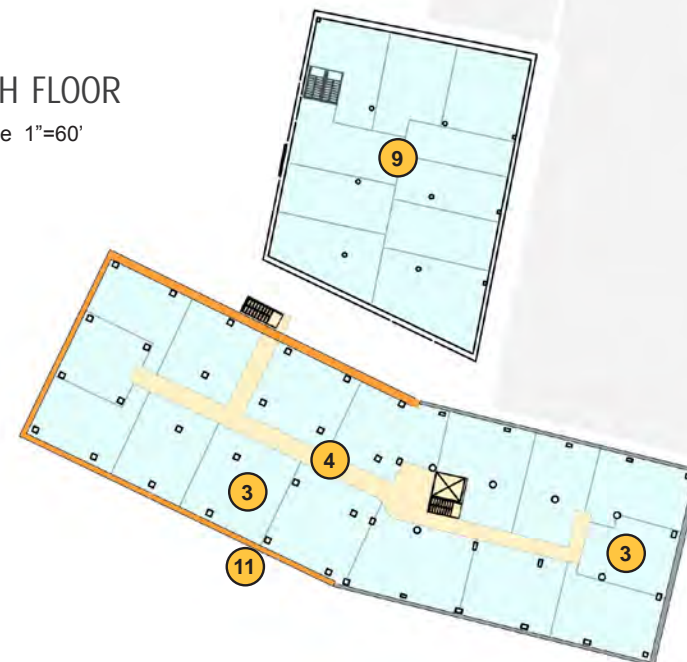
THE ICE HOUSE PROGRAM OVERVIEW UPPER FLOORS

The upper floors of the Ice House Complex are better suited to adaptive reuse as loft housing, which is the primary economic driver for development of the site. Both Ice House East and West and The Block are suitable for loft apartments with the critical addition of new vertical circulation and windows. Due to the unique conditions of the Ice House Complex the 2nd floor is slightly more challenging than the 3rd and 4th floors which are virtually free from obstructions. The 2nd floor would benefit from a detached 2nd floor Annex to maximize unit counts which may be possible given the more recent construction of the Annex and its likely 'non contributing' status as a part of the historic complex. (For this study, the full footprint of the Annex is shown.)

On all floors there are multiple ways to carve up the floor plates to achieve a mix of unit sizes and layouts within the existing structure. The current market favors 600 to 900 sq ft 1 bedroom apartments and the diagrams on this page show 54 units within and around that range with some units leaning towards a studio layout and some potentially created as 2 bedroom units. The layouts shown are only a possible layout of the floors, and have not been developed at the unit level in this conceptual planning document.



4TH FLOOR
scale 1"=60'



ROOF PLAN
scale 1"=100'



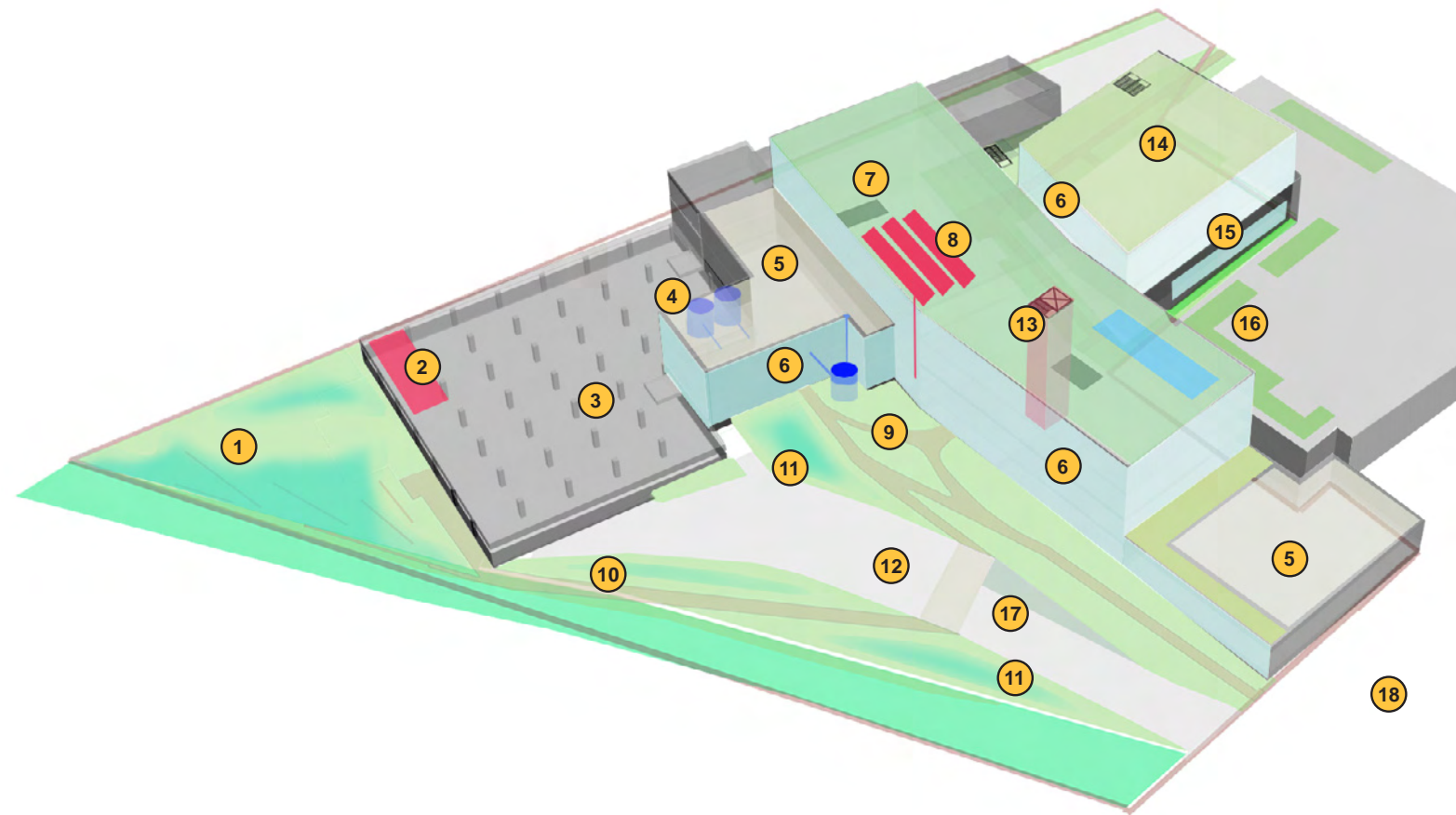
Above, the structural concrete roofs of the Ice House and The Block allow these large roof areas to be occupied, with access via the proposed vertical circulation. These two roofs may be planted for insulation, beautification, habitat and stormwater management, and may even support vegetable gardens (see p. 14) or a shallow pool (such as Endless Pools). The existing stairwells (shown in dark green) may be converted into tool sheds for maintaining the green roofs or utilized for solar equipment (see following page). The Annex and Liberty Street Frontage may benefit from skylights for additional natural lighting to support interior programs.

THE ICE HOUSE

ENVIRONMENTAL OVERVIEW

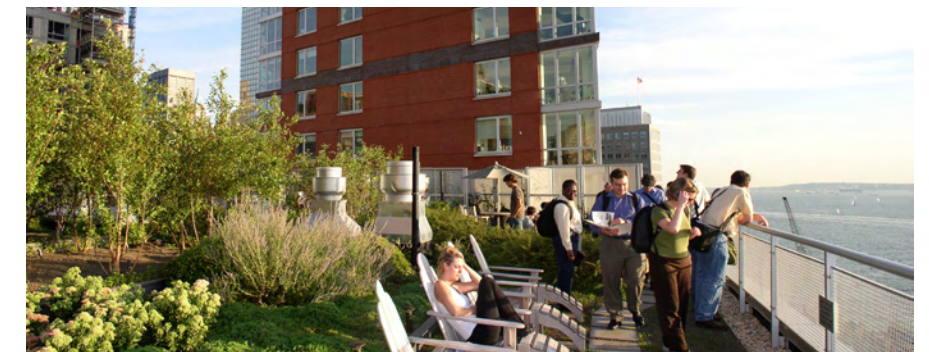
The Ice House Complex may be designed with a range of regenerative strategies to help restore the landscape, hold and filter stormwater, conserve or produce energy and enhance the overall desirability of the living and working spaces. Due to the adaptive reuse of the existing structures and urban connectivity of the site, the Ice House Complex likely already qualifies for approximately 50% of the points needed to obtain LEED certification, making this project an ideal candidate for showcasing urban sustainable development. The concepts shown on this page are just a selection of the possible environmental strategies, but are representative of the types of systems for water, energy and ecology that could be utilized.

Many of the programs proposed for the Ice House Complex also have a role in this unique sustainable model including the live-work opportunities and the project's connection to local food through the shared kitchen, Farmers Market and aquaponic program interconnections.



ENVIRONMENTAL ELEMENTS OVERVIEW

- 1 GARDEN TERRACE - REGENERATED RIPARIAN BUFFER**
A significant area of land to showcase regenerative strategies, outdoor bbq area for residents, and potential long-term connection to a downtown pathway
- 2 CAR SHARE / ELECTRICAL CHARGING STATIONS**
See p. 10 for additional information
- 3 CAR AND BICYCLE PARKING (above and below)**
Depending on structural analysis and potential column removal The Deck may be re-used as a parking structure; a very unique reuse opportunity
- 4 RAINWATER HARVESTING**
Harvested rainwater may be used in an aquaponics program or for toilets, cleaning, car wash water, and irrigation.
- 5 SKYLIGHTING - MAXIMIZING NATURAL LIGHT**
Skylights for the Annex and Liberty Street Frontage will help support programs
- 6 WINDOWS AND GLAZING FOR FACADES**
Maximizing natural light into the building interior while balancing the need for historic preservation. Non-historic facades allow for more flexibility.
- 7 ICE HOUSE GREEN ROOF**
The heavily structure concrete roof may support rooftop occupation including green roofs, rooftop vegetable gardens (see p. 14) and even a shallow pool.
- 8 SOLAR HOT WATER / SOLAR PV**
Solar hot water could support apartments, restaurant / cafe and the shared kitchen facility. Solar pv could provide for some of the building's energy. Such a system may also be combined with a geothermal system if viable at this site.
- 9 NATIVE LANDSCAPES**
Removal of paving for native landscapes where paving is not necessary
- 10 ACCESS TO BLACKS RUN**
Providing access to Blacks Run, potential long-term modification of retaining wall
- 11 RAIN GARDENS AND BIOSWALES**
A series of landscape areas designed to capture and filter stormwater before entering the storm drains and into Blacks Run.
- 12 HIGH ALBEDO PAVING**
Light-colored new paving to reduce heat gain around the Ice House Complex
- 13 SINGLE REGENERATING ELEVATOR**
High efficiency regenerative elevator can reduce energy use by up to 50%
- 14 GREEN ROOF ON THE BLOCK**
The highly structured concrete roof may support a range of activities.
- 15 LIVING LIGHT WELL**
The space between The Block and 205 S. Liberty may be planted with a vertical green wall to filter natural light into the ground floor of The Block.
- 16 GREEN ROOF ON ADJACENT BUILDING ROOFS**
The adjacent rooftops may be enhanced with planters to improve the view from the apartment lofts while also reducing stormwater and adding habitat.
- 17 PERMEABLE PAVING**
Select paved areas that only require temporary vehicular use may utilize permeable paving - planted or with gravel, to reduce stormwater runoff.
- 18 TRANSIT OPTIONS AND CONNECTIVITY**
The site's proximity to downtown, JMU, bikeways, the Farmers Market, and transit is optimal for promoting urban green living.



Above, an extensive occupied green roof at Solaire in Battery Park, New York City (photo courtesy of Ramon Cruz). The Ice House and The Block already have the structure required to support this type of desirable amenity. Below, a sculptural floodwall by Michael Singer along the downtown Grand Rapids Riverwalk that was built as a part of an Army Corps project but designed as a regenerative work of art. The southwest corner of the Ice House site could utilize a similar terraces, working around existing trees, to create an accessible space along Blacks Run. A long-term development may allow for some of the retaining walls to be removed along the southern edge of the site for additional access and riparian edge regeneration.



PROGRAM INTERCONNECTIONS

LIVE - WORK OPPORTUNITY (see p. 13)

The open office program offers residents of the Ice House and The Block the ability to have an expanded interactive 'home' office. This opportunity is typically desirable for small and web-based businesses.

LOCAL FOOD (see p. 12 and p. 14)

Whether utilizing the in-building restaurant / cafe, purchasing aquaponic goods, visiting the Farmers Market, taking a class in the shared kitchen, or growing on the rooftop- residents can partake in numerous local fresh foods.

SHARED EVENTS SPACES (see p. 13)

Event and gallery spaces may be 'rented out' by residents of the Ice House Complex. An artist for instance could rent the gallery for a show, a chef could rent the kitchen.

SHARED GYM / POOL

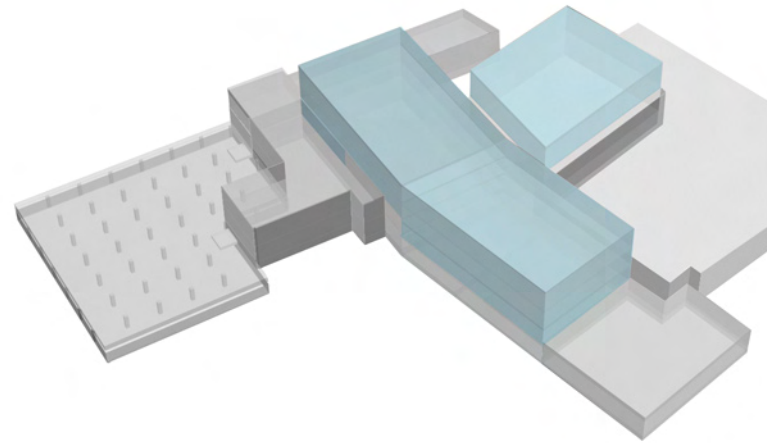
People working in the Ice House Complex office areas, artisan spaces, gallery or other programs may have the added benefit of access to the gym or pool to complement their work environment.

SHARED ADMIN, LOBBY AND SECURITY

Administration offices, bathrooms, lobby amenities and building security may all be shared between the loft apartments and other Ice House Complex programs. Green systems such as solar hot water, or geothermal heating/ cooling, may be a shared cost for maintenance as well

SHARED PARKING

Some parking may be designated, while other flex parking may be shared, allowing daytime use for businesses and evening use of residents.



Above, light blue areas indicate proposed locations for loft apartments within the Ice House East and West and the 2nd floor of The Block.



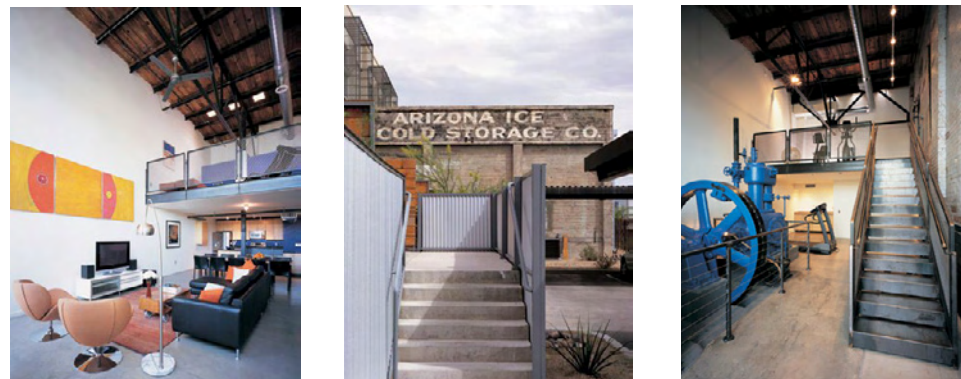
Above, images of the variety of windows and openings along the Ice House Complex historic façades. While the majority of the historic Ice House Complex façades have minimal apertures, these windows and loading docks provide plenty of formal and aesthetic references for application to the blank brick façades. Window size and placements will be a balancing act between historic references and allowing natural light for people living and working within the Ice House Complex.

THE ICE HOUSE LOFT APARTMENTS

Loft apartments are the primary economic driver for development of the site and program for the upper levels of the Ice House Complex. Both the main Ice House East and West and The Block are suitable for loft apartments on the upper levels. Housing (whether apartments, or sold in a condo model) is only possible with the critical addition of new vertical circulation and windows for natural light and ventilation. These windows will likely need to reference some of the original Ice House Complex windows (shown left) and other openings (such as the loading docks, also shown left) for the historic facades. It is understood that numerous conversations have been conducted between the property owners and the Virginia Department of Historic Resources regarding these façades which will need to be carefully developed in the early phases of design.

The upper floor diagrammatic layouts for the Ice House Complex shown on page 8 suggest 54 units ranging in size from 600 to 900 sq ft may be possible. Some units may lend themselves towards a studio layout and some may be potentially created as 2 bedroom units. The layouts shown are only a possible layout of the floors, and have not been developed at the unit level in this conceptual planning document. Cold storage facility conversions are in-fact not that uncommon, and housing is often the program of choice for such facilities. Some of the more notable cold storage facility conversions include Decatur, Georgia, Denver, Colorado (shown below middle) and Tuscon, Arizona (shown far left).

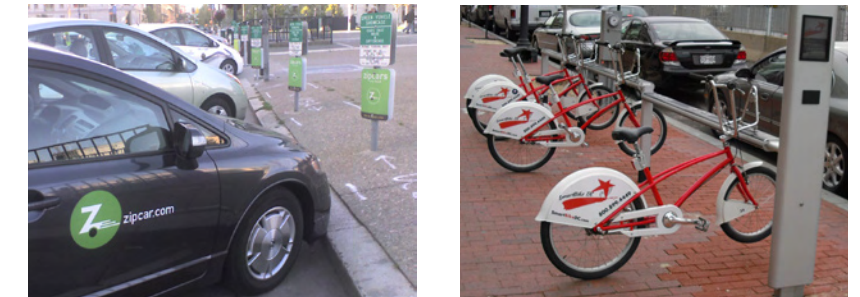
During discussions with the community, the concept of a boutique hotel program was raised as a potential alternative to loft apartments. This concept may be viable, and is largely dependent on other hotel development sites being considered in the area. Most of the concepts in this study may still be applicable to a boutique hotel program instead of apartments, though some aspects of the ground floor program and site layout would need to be reconsidered.



Above, Ice House Lofts in Tuscon Arizona by Architect Ron Paulus. The building complex has 51 residential units, including some split-level units (above left) that look similar to the potential layout of The Block loft units. The gym (above right) has some of the original ice equipment; similar showcasing of historic industrial equipment could be done in the Ice House Complex, especially in circulation areas on the ground floor. Photos by Bradley Wheeler.



Above, the Denver Ice House and Tavern. Note the significant modification of some of the façades to accommodate housing (windows, balconies) while retaining some historical character and material references. The large super graphic "Ice House" is utilized on one of the more visible façades.



Above, examples of car share and bike share parking stations. Given the downtown location of the Ice House Complex, and the anchor residential tenants, such programs may be implemented at the Ice House as another small business opportunity. Residents could share vehicles and thus not require individual parking spaces. These programs may be expanded in downtown Harrisonburg or even onto the JMU campus.

PROGRAM INTERCONNECTIONS

CREATIVE COMMUNITY

Working artisans and a gallery are mutually supportive programs that create a cultural hub which encourages more visitors collectively than singularly.

JMU ARTS AND GALLERIES

Connecting with JMU for a new downtown gallery or creating a new venue in which to sell student, faculty and alumni work offers an innovative way to interact with campus life.

REGIONAL ARTS AND CRAFTS

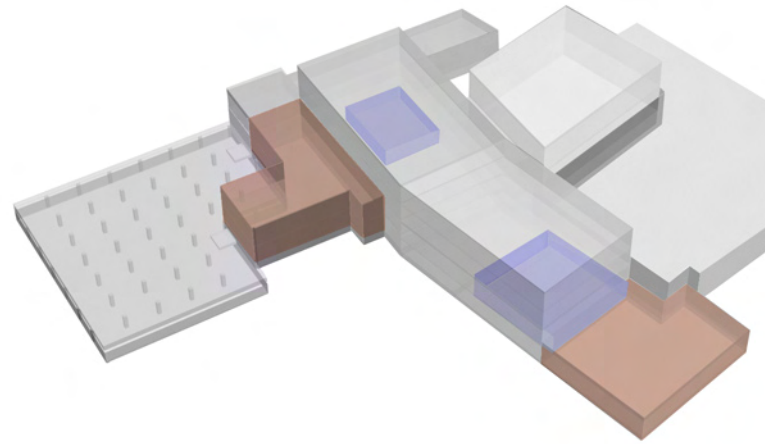
The Ice House gallery and or artisan spaces may be a venue for regional artisans, such as Mennonite furniture makers, to obtain exposure to a wider audience. Initially, this interaction may be fostered through the Farmers Market.

CULINARY ARTS (see p. 12)

Visitors to the Ice House coming to experience a culinary arts demonstration in the community kitchen will be able to visit the gallery and the artisan work spaces.



Above, RISD Works, the commercial store of the Rhode Island School of Design in Providence, Rhode Island. This specialty retail space only sells products created by students, faculty, and alumni of the college. RISD Works previously had a downtown location in a storefront a few blocks from the RISD campus (it is now located on the campus itself as a part of the museum). Similarly, JMU could establish a gallery-like retail environment for selling student, faculty and alumni artwork, inventions and products.



Above, the mauve areas indicate potential locations for artisan spaces (2,600 - 4,000 sq ft on the ground floor, more if second floor Annex is utilized). The lavender areas indicate potential locations for gallery areas associated with the artisan spaces (2,300-3,000 sq ft).



Local artisans such as Custom Jewelry Designs and other crafts people such as Mennonite furniture makers are perfect examples of destination artisan commercial businesses. These two examples have been suggested as workshops in a 'living museum', equally cultural destinations and retail environments. In most cases, visitors would be seeking out these artisans from online searches, word of mouth or having seen their work elsewhere. The Ice House Complex can provide a unique venue for collaboration and interaction between artisans, other people living and working in the Complex, and visitors.



Above, Urban Outfitters is an example of a 'destination' retailer that would prefer a unique gritty post-industrial retail location compared to a suburban mall. They seek out urban, typically downtown locations, and work with exposed beams and columns as a part of a store's aesthetic. Given that they just opened a 3-story shop in downtown Syracuse, New York, largely due to the University population, the Ice House could be a potential venue for this retailer.

THE ICE HOUSE

DESTINATION ARTS AND COMMERCIAL BUSINESSES

The Ice House Complex is suitable for unique programming such as artisan work spaces and open galleries. These businesses can benefit from the durable and open construction of the Ice House Complex and may utilize spaces that are otherwise marginal for other programming. With the exception of the desirable Liberty Street Frontage area, the Ice House Complex lacks street frontage typically required by traditional retailers. Even the Liberty Street Frontage likely lacks the visibility and foot traffic most retailers require. "Destination commercial" businesses therefore refer to places that people go to not by chance, but specifically to seek the business out. Artisans may desire such off-the-grid retail spaces and certain retail types, suggested on this page, may benefit from such a location as well.

A gallery space within the Ice House Complex could similarly be utilized as a destination venue- leveraging the unique environment and atmosphere of the building. The exterior courtyard spaces could be utilized as temporary outdoor sculpture venues associated with the gallery. The gallery may have a potential interconnection with JMU galleries and art programs, as well as with in-house and in-town artisans. These links are also fostered by numerous nearby cultural venues that attract a regional audience seeking culture and unique shopping destinations.



Above, an example of a gallery space converted from an industrial mill at Mass Moca in Lowell, Massachusetts. Several of the Mass Moca galleries lack natural light and are often creatively organized to work with the post-industrial layout and conditions of the large museum complex. A gallery in the Ice House would similarly benefit from the unique atmosphere of the Complex and the potential availability of flexible multipurpose interior and exterior spaces. If partnership with JMU, the gallery could have faculty and alumni shows, or even students shows, to sell work, in addition to showcasing local and regional artists.

PROGRAM INTERCONNECTIONS

RESTAURANT / CAFE KITCHEN

The commercial kitchen facility would primarily be used by any cafe or restaurant in the Ice House Complex, with shared use occurring when the business is not serving.

FARMERS MARKET

Connections with the Farmer's Market include cooking demonstrations, canning and even potentially the sharing of compostable waste from the kitchen and lofts.

REGIONAL CANNING AND CO-PACKING

The Ice House could become a regional co-packing destination for producing local food products. A number of small businesses could rent time in the kitchen for creating products or running a catering operation.

JMU HEALTH AND HOSPITALITY

JMU Programs in Health, Hospitality and Life Long Learning all have potential to utilize a demonstration kitchen. Click on links in the center of this page for more information.

CO-OP AND DOWNTOWN RESTAURANTS

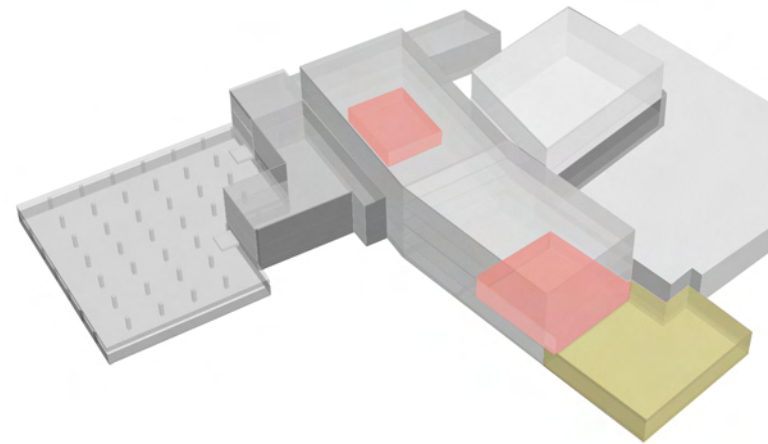
The Friendly City Food Co-op (www.friendlycityfoodcoop.com), recently opened in downtown Harrisonburg, sells local products and may be good partner with a shared kitchen. It has been suggested that other businesses such as the A Bowl of Good Cafe, or even the local schools may also be interested in a partnership.

AQUAPONICS (see p. 14)

An aquaponics center in The Annex could provide an additional source of locally grown food for the kitchen to prepare. In theory, the Ice House could produce, cook, and serve food in one location. Green technologies such as solar hot water could also be shared between these end-users.



Above, the DC Central Kitchen is a model for community kitchens around the nation (www.dccentralkitchen.org). The kitchen collects 3,000 pounds of surplus food every day from area food service businesses and converts them into 4,500 meals for those in need. The kitchen staff is based around a job training program in the culinary arts in addition to volunteers. Local groups such as Our Community Place (www.ourcommunityplace.org) in Harrisonburg have similar programs that may be interested in utilizing a larger or more updated kitchen facility.



Above, the pink areas indicate potential locations for culinary arts kitchen (2,300-3,000 sq ft). This program may be associated with a restaurant / cafe (2,000-4,000 sq ft shown in yellow) in the Liberty Street Frontage, or near the loading area at the rear of Ice House West, if more catering / production oriented.



The potential interactions with the Farmers Market are many, including cooking demonstrations, canning, food prep and support for the Winter Market. Image from Downtown Harrisonburg Renaissance's website.



The culinary arts kitchen may be designed as a learning kitchen for teaching cuisine, canning or nutrition. Such a venue may be desirable for JMU Health Sciences Department (nutrition, [click to here to see article](#)), Hospitality Management (cuisine, culture, [click here to see courses](#)), and JMU's Life Long Learning Center (general interest, [click here to see program](#)). All of these JMU programs have classes and demonstrations that could utilize such a kitchen facility.



Left, The Hanover County Cannery and Commercial Kitchen is one of the closest co-packing and cooking facilities available to the public. The Cannery is stocked with large stainless steel sinks and work tables; steam jacketed kettles in 30, 40, and 80-gallon sizes; a steam blancher, corn cutter, and juicer-pulper. According to the Shenandoah Valley chapter of Buy Fresh Buy Local (www.buylocalshenvalley.org), there is demand for such a facility in the Harrisonburg area. The co-packing operation could be small business similar to the Farm-to-Table Co-Packers in New York (www.farm2tablecopackers.com).

THE ICE HOUSE

CULINARY ARTS COMMUNITY KITCHEN

The Ice House Complex ground floor may be an ideal location for a culinary arts community kitchen that could support a number of small business users. A shared kitchen facility can benefit from the durable and open construction of the Ice House and may utilize spaces that are otherwise marginal due to a lack of natural light (which is not critical for a commercial kitchen facility).

First and foremost, a kitchen facility would be utilized by any cafe or restaurant program, which would likely be located in the Liberty Street Frontage. In this scenario the kitchen would likely be located just west (behind) the restaurant or cafe. If the Ice House Complex has no restaurant or cafe, then the kitchen may be more suitable near the loading areas at the rear of Ice House West where it may be more readily available for packing, catering and deliveries.

In either location the kitchen may be more than a back-of-house facility, and may be designed for classes, cooking demonstrations, or even a co-packing facility associated with the Farmers Market. In addition to supporting small business enterprises for specialty prepared foods, the kitchen could be utilized by local groups such as Our Community Place, for preparing meals or even training.



PROGRAM INTERCONNECTIONS

LIVE - WORK OPPORTUNITY

The open office program offers residents of the Ice House and The Block the ability to have an expanded interactive 'home' office. This opportunity is typically desirable for small and web-based businesses.

START-UP AND BUSINESS INCUBATOR

The open office may connect with City small business development groups, the JMU Center for Entrepreneurship in the College of Business, and the Shenandoah Valley Small Business Development Center. JMU students with a business concept may find the open office as a suitable place away from campus to found a new venture.

VISITOR'S WORKSPACE

Visitors to JMU, Rosetta Stone or other regional businesses may utilize the open office when in Harrisonburg on a regular basis.

ARTS BUSINESSES (see p. 11)

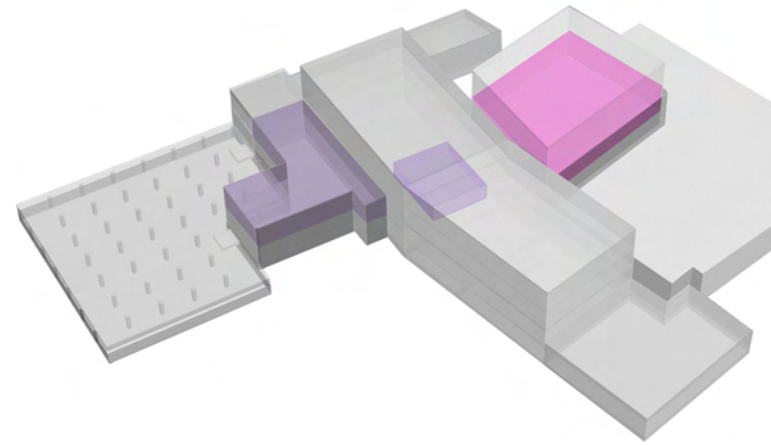
Artisans working at the Ice House Complex may require office space which can be accommodated within the open office model.

EVENTS PROGRAMMING

Any number of downtown or regional businesses may require the use of a large flexible event space for conferences, gatherings or celebrations. The ground floor of The Block could be rented out for such occasions - attracting large groups to the Ice House Complex.

FOOD BASED BUSINESSES (see p. 12)

Food based businesses or non-profits operating out of the culinary arts community kitchen, or the restaurant/ cafe may require office space which can be accommodated within the open office model. A catering business in the Ice House could also be a provider for events occurring within the flexible space on the ground floor of The Block.



Above, the purple areas indicate potential open office program locations- approximately 2,000 sq ft shown in Ice House West, and 4,000 sq ft in the 2nd level of The Annex. The ground floor of The Block is shown in bright pink as a potential multipurpose flexible space of up to 5,800 sq ft.



Above, Citizen Space in San Francisco (www.citizenspace.us) is another example of a co-working business, located in an interior space similar to the type of spaces available in the Ice House Complex. Citizen Space is a unique model in that it includes classes and workshops, fosters a community environment for the participating businesses and users, and even has a library. Citizen Space is about 4,000 sq ft compared to Open Space in Charlottesville which has 7,000 sq ft. The Ice House open office would likely start with a smaller space of around 2,000 sq ft that could be moved or expanded over time.

THE ICE HOUSE

FLEXIBLE SPACE

OPEN OFFICE AND EVENT SPACE

The Ice House Complex has several spaces that may be suitable as office environments (once modified to introduce natural light) but that may be utilized in the interim as flexible multipurpose spaces. The Annex 2nd floor (or even potentially its ground floor), The Block ground floor and some portion of the ground floor in Ice House West are all candidates for this type of program. These locations have limited street presence and/or limited natural light potential- but enough light potential to be functional as office space.

One type of flexible program is an 'open office model' also known as co-working spaces, which operates with very little infrastructure and may be relocated and re-sized within the Ice House Complex as tenant needs change over time. This type space supports small businesses and start-ups and thus links well with many of the other program ideas put forth in this study. A good regional open office model is Open Space in Charlottesville, Virginia (www.getopenspace.com) which charges \$9 an hour or \$250 a month per user and includes access to conference rooms, internet access, workstations, kitchen, bathrooms and parking.

Due to the nature of ice house and cold storage facilities (heavy structure and insulation, typically limited natural light), they are often converted into night clubs and music venues. With relatively little investment The Block ground floor could be converted into such a space as a venue for a range of concerts, parties, exhibits, ballroom dancing, theater, or photography and filming (see examples bottom left). A second means of egress would be provided, likely along the south wall. In the long-term, the ground floor of The Block may be outfitted for an office tenant by cutting openings for natural light along its south, west and east (as a light well) facades to create a similar feel to the project below in Spain.



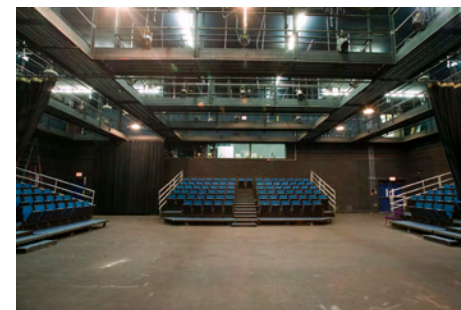
Above, photography and filming studios often need controlled environments for their work. The flexible space in the ground floor of The Block could accommodate this type of program. A photographer may then decide to utilize the open office as a workspace near this photography / filming space.



Above, a wedding reception in a converted warehouse space with controlled lighting and movable furniture and fixtures. A similar program could be imagined for the ground floor of The Block with catering and bathrooms located in the adjacent Ice House (east and west wings).



Above, a converted warehouse space being utilized for a special gallery exhibition involving video art. The ground floor of The Block or the gallery in Ice House East or West could be a venue for video, projection and interactive artwork.



Above, a block box theater space with movable and collapsible bleacher style seating. All of the programs at the bottom of this page could occur in the same space at the ground floor of The Block by utilizing movable furniture and fixtures.



Above, an abandoned cement factory converted into an office and home by and for architect Ricardo Bofill in Barcelona, Spain. The project was completed over 35 years ago but remains one of the most spectacular examples of adaptive reuse of an industrial site.

PROGRAM INTERCONNECTIONS

LOCAL FOOD

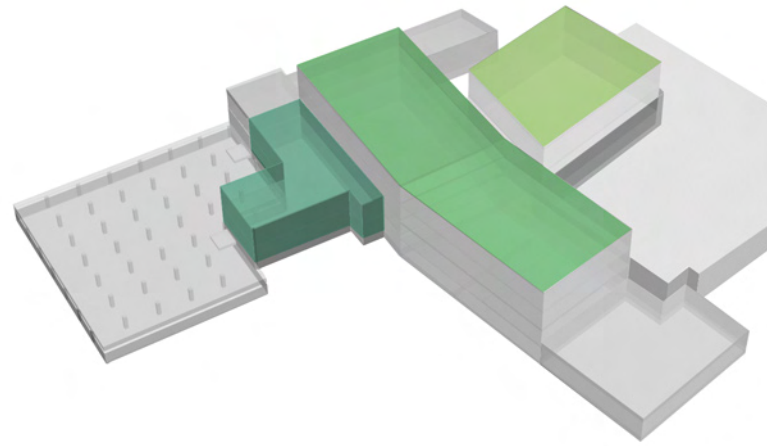
An aquaponics facility and/or green roof, whether commercial or research based, could provide fresh greens and fish to Ice House residents, the Farmers Market, the Co-op, JMU or local schools.

JMU ENVIRONMENTAL SCIENCES

JMU's Environmental Sciences program could be the primary end-user for the an aquaponics facility. The space could be utilized as a JMU research facility and / or leased and shared for regional users including the Virginia Cooperative Extension (statewide agricultural support services and research).

CULINARY ARTS SUPPLIER (see p. 12)

Rooftop gardens or the aquaponics facility could provide a source of greens and fish to the in-house restaurant/ cafe, caterer or food packing businesses located in the Ice House Complex.



Above, the dark green Annex building (up to 8,000 sq ft on two floors) is perhaps best suited for an aquaponics facility as it has an existing steel structure and likely requires a completely new building envelope which may be designed for more natural light. The green roof area shown on the Ice House is a combined 12,600 sq ft of area, and The Block roof is another 5,800 sq ft; both heavily structured and able to support a green roof. The combined growing area could be up to half an acre.

THE ICE HOUSE GROWING LOCAL

Growing food is not typically what one might first think of when exploring the potential of a large urban adaptive reuse project, but the Ice House Complex is not a typical project and Harrisonburg is not a typical city. The adjacencies of the Farmer's Market and the new Co-op as well as potential in-house kitchen facility, catering and food businesses all have possible interconnections with growing food on-site. The Annex building with its existing steel structure may be the best location for an indoor year-round growing facility. The Annex exterior walls are not historical and are in very poor condition and are therefore a good candidate for a more transparent building envelope. The Annex could then support an interior growing program such as the aquaponic facility described below.

The massive structure of Ice House East and West and The Block can support a range of rooftop programs once suitable vertical circulation access is provided. A cable railing detail may be necessary for building code and safety requirements- but beyond that the roof is essentially free program space for the imagination. A green roof on these buildings will add additional insulation, improve stormwater management and quality, provide habitat, and would likely be one of the largest green roofs in the entire region. Growing food on the roofs would create a unique local resource.



Above and left, Brooklyn Grange- a 40,000 sq ft roof top farm actually in Long Island City, Queens, New York. The farm is built on a 1919 building with a concrete roof, likely similar in construction to the Ice House and The Block. Brooklyn Grange is a commercial organic farm and sells to the public and restaurants. They also offer community and school tours and plan to expand into other communities to make local healthy food more readily available to the public. Photo credit above left: Donnelly Marks.



Left, an integrated aquaponic demonstration at Epcot, Disney World, Orlando, Florida. This exhibit is a part of Epcot's Living with the Land tour, which includes both hydroponic and aquaponic systems that provide produce for the theme park's restaurants.

Right and below right, Sweet Water Organics (www.sweetwater-organic.com) in Milwaukee, Wisconsin converted a former crane factory into an indoor aquaponics facility, raising about 55,000 fish (Tilapia and Perch) in tanks topped by beds of lettuce and other crops. As they describe on their website: "aquaponics is a system of agriculture involving the simultaneous cultivation of plants and aquatic animals such as fish in a symbiotic environment. In a traditional aquaculture, animal effluents accumulate in the water, increasing toxicity for the fish. This water is then led to a hydroponic system where the by-products from the aquaculture are filtered out by the plants as vital nutrients, after which the clean water is re-circulated back to the animals. The term aquaponics is a portmanteau of the terms aquaculture and hydroponic."

These types of aquaponic enterprises are not common, but interest in them is growing as sustainable fish and local year-round produce becomes more in demand by restaurants and consumers. It is possible to imagine a similar facility in the Ice House Annex making use of the good southern exposure and access to the rear vehicle loading area as well as selling to local restaurants and at the Farmers Market. Given the unique nature of such a facility it may start as a JMU research or collaboration project to later evolve into a commercial operation, or possibly remain as a demonstration project and food supplier to JMU. The facility has a great potential for research, innovation and educational outreach. Eastern Mennonite University also offers majors in Biology and Environmental Sustainability, and may be interested in such a facility as well given their emphasis on 'hands-on' education.



THE ICE HOUSE

VISION STUDY

LIBERTY STREET VIEW



Above, conceptual rendering



Left, existing conditions 04.18.11

The Liberty Street View is perhaps the most visible face of the Ice House Complex for the public. The historic brick facade of the Liberty Street Frontage will be maintained and restored. Accessibility to the site can be enhanced with a gently sloping walkway that will rise to the level of the Ice House West loading docks for a central entry area (see p. 7). The non-historic 3rd and 4th level Ice House East facades and the Annex Building facade (in the distance) may be completely re-skinned to maximize natural light for the interior spaces. Large areas of new landscape spaces may be added due to the potential for the use of structured parking above and below The Deck in the southwestern corner of the site. Access to Blacks Run (behind existing trees and thus not visible in the rendering) occurs deeper within the site along the southwestern edge where one can actually reach the edge of the water.

Please note that this conceptual rendering is not a design, but rather a vision of what might be possible at this location. In-depth design, engineering feasibility, cost analysis and 3rd party reviews will have a role in shaping the final project form and function.

THE ICE HOUSE

VISION STUDY BRUCE STREET VIEW



Left, conceptual rendering



Above, existing conditions 04.18.11

The current 'back side' of the site facing Bruce Street can be radically transformed as a 2nd entry to the Ice House Complex and an equally important civic space as the Liberty Street entry. The Big Move described on page 6 opens up historic facades of Ice House West and The Block to create loft housing filled with natural light and maximizes the adaptive re-use of the Complex as a whole. The Big Move also creates a landscaped courtyard space and a pathway between the building masses, allowing direct access to Ice House East and West from Bruce Street. Structural remnants of the removed portions of the Complex may be left in place as suggested in the rendering. The existing Rear Circulation area could be significantly modified as a semi-open structure and ramped to allow vehicular access to The Deck parking area at the southwest corner of the site.

Please note that this conceptual rendering is not a design, but rather a vision of what might be possible at this location. In-depth design, engineering feasibility, cost analysis and 3rd party reviews will have a role in shaping the final project form and function. Also, the green roof option suggested on page 8 is not shown in this rendering but may be added if requested.

THE ICE HOUSE VISION STUDY INTERIOR CORE VIEW



Above, conceptual rendering



Above, existing conditions 04.18.11

This rendering is from within the Ice House Complex looking east and depicts the interior program potential of this critical juncture between Ice House East, Ice House West and The Annex building. Newly added north facing windows in Ice House West allow for an open collaborative office space in the converted cold storage and equipment areas. The Annex Building is shown with the potential aquaponics facility described on page 14 that could act as a research facility, a commercial food producing operation and even an attraction for visitors to the Ice House Complex for tours. The main corridor connecting these programs could be an extension of the gallery, utilizing the more active public space for sculptural furniture, for instance, that could be a shared amenity for the Complex.

Please note that this conceptual rendering is not a design, but rather a vision of what might be possible at this location. In-depth design, engineering feasibility, cost analysis and 3rd party reviews will have a role in shaping the final project form and function.