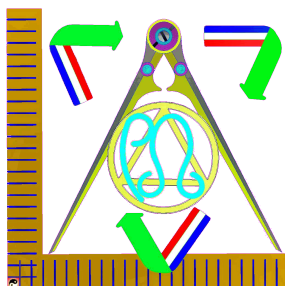


The Velvet Freeze

Historic Remodel Proposal

Project Overview

31st & Gillham Plaza
Kansas City, MO 64108



David Holding

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¹ General Requirements

The Longfellow Community Association - Historic Remodel Proposal is a renovation proposal for the historic building located at 506 E. 31st Street, Kansas City, MO 64109. The proposal seeks to renovate and preserving a unique historical artifact of Kansas City using sustainable design concepts and technologies to make the building self-sustaining with a near zero carbon footprint. Sustainable design concepts will include green rooftop decks, eco-friendly parking area, energy and water harvesting technologies. Design and technology selections will strive to achieve Gold to Platinum LEED (Leadership in Energy and Environmental Design) Certification.

The design proposes a multi-use building that will provide added value to the surrounding communities by adding family entertainment resources, event space, an alternative large screen format venue, and a unique ice cream drink lounge. The concept designs are based on the guidelines discussed with Butch Rigby of Screenland® of Film Row Company LLC®. Key design elements include the following.

- Lot landscaping will contain parks and fountains that make use of water harvesting and recycling to reduce city water dependency to near zero and reduce or prevent runoff.
- Voltaic solar cells, wind energy and energy capturing technologies and systems will be installed to reduce electric grid dependency and costs.
- The original ice cream storefront will be remodeled to function as the main bar and theme of the building.
- A theater space with adjustable lounge style environment will be provided in the main two-story interior section. High-end consumer DVD/Blu-ray technology will be used to allow use by the general public. The interior of the theater will include curtains
- A full-service restaurant will be included to provide separate services and catering services.
- The warehouse will be renovated for general event space and include a stage area.
- General office rental space will be included to generate a steady source of income. A general waiting area will be provided next to the office space.
- Additional space usable for event and storage will be provided.
- Live performance event space will be included with seating, bar and food service.
- General lounge and game space will be included.

¹ This is a project proposal originally developed as a capstone drafting and design project called "The Velvet Freeze Project". The project proposal continued for further development and renamed as the "Longfellow Community Association - Historic Remodel Proposal."

- Green roofs will be installed to provide decks with city views and entertainment space.

Existing Conditions

Originally constructed in 1930 as the Levy Brothers Meat and Provision Company, the building is remembered as the old famous Velvet Freeze Ice Cream Dairy. The corner of 31st and Gillham is the crossroads for three historic neighborhoods (Longfellow, Union Hill, and North Hyde Park) and a part of the Martini Corner Entertainment District (part of the Kansas City Strip Nightlife). The Velvet Freeze was one of three dairies located in that neighborhood area. After the Velvet Freeze closed business operations in the KC area, the last known business was the Sunglo Skylight Products.

The Martini Corner area, an entertainment district self described as “hip + creative entertainment district with all local owner operated joints. From martinis to sports to wine and outdoor patios, Martini Corner has it all within feet of each other.” Other historic properties and development in the area include the 1918 Greenlease Cadillac Building Lofts, The Filling Station coffee house, the 1920 Battery Lofts, Liberty Memorial, Union Station and Science City, Hospital Hill with Truman Medical Center and Children's Mercy, and Hallmark Corporation.

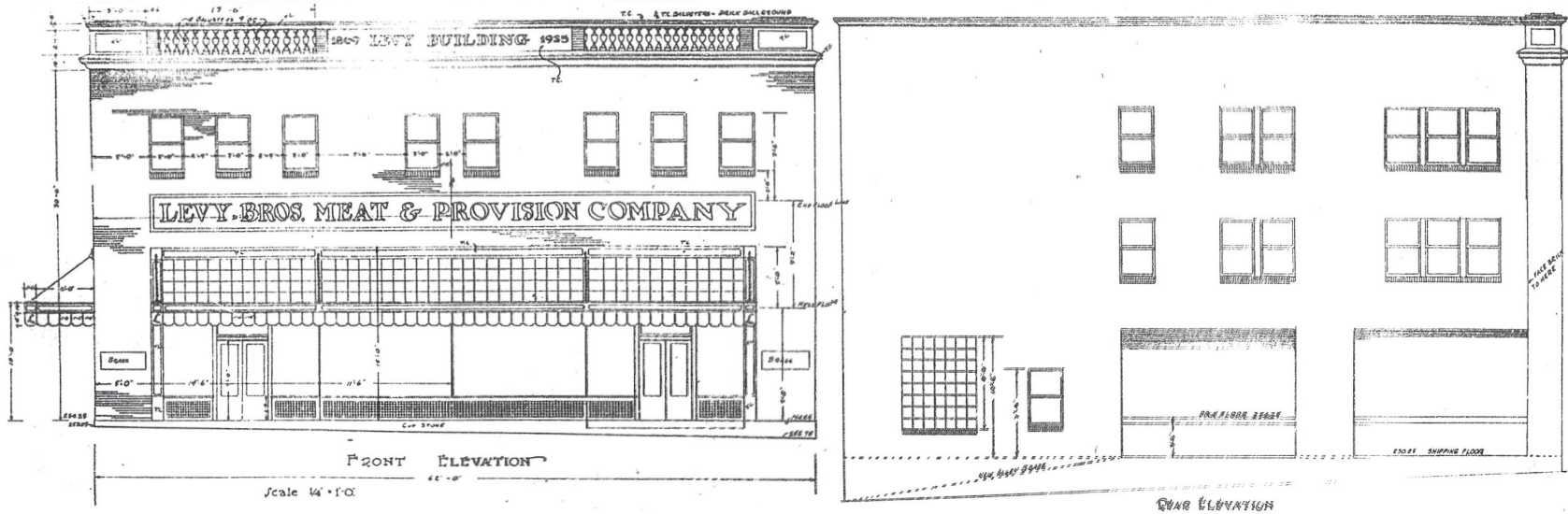
The Velvet Freeze Ice Cream® is a federally registered trademark of McGuinness Enterprises Inc. whose main office is located at 7355 West Florissant Avenue, Saint Louis, MO 63136-1348, Phone: (314) 381-2384. Owner John McGuinness notes that the Velvet Freeze Ice Cream has been in business for 78 years and once had 20 locations in the Kansas City area. Now solely operating in the St. Louis area, the Velvet Freeze still makes its original line of flavors.

Original Diagram Scans

The original diagrams were obtained from the Linda Hall Library, Kansas City, Mo. Theses included fifteen (15) sheets for elevations, floor plans, foundation plans, construction under first floor, mezzanine, 2nd & 3rd floor, column schedule & details, and roof plan. Original title, architect and engineer are noted below.

Wholesale & Retail Market Building
For Levy Bros. Meat & Provision Co.
31st & Gillham Road
Kansas City, Mo
P.H. Anthony, Architect, Kansas City, Mo.
M.P. Bury, Cons. Engr, Memphis, Tenn.

The scans of the original diagrams for elevations, floor plans and sectional are shown on the following pages for reference.



SHEET No 1

Diagram 1: Front and Rear Elevation

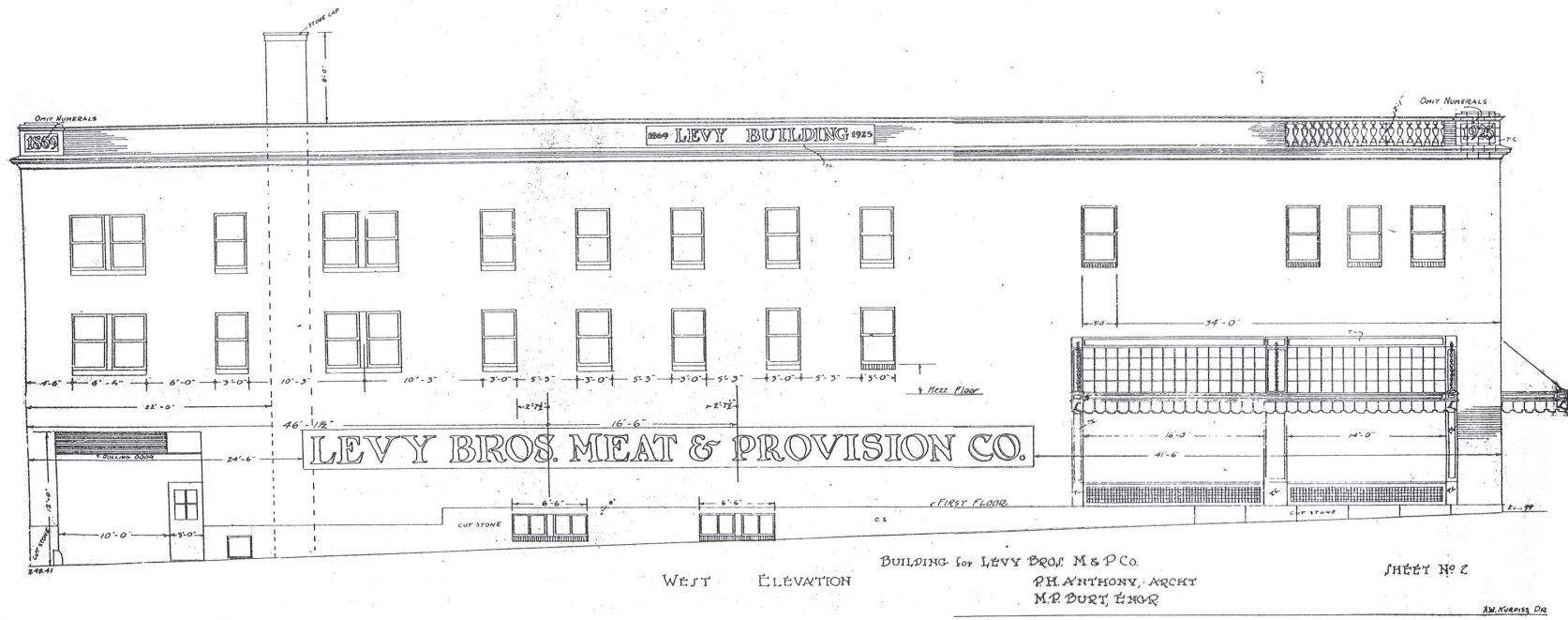
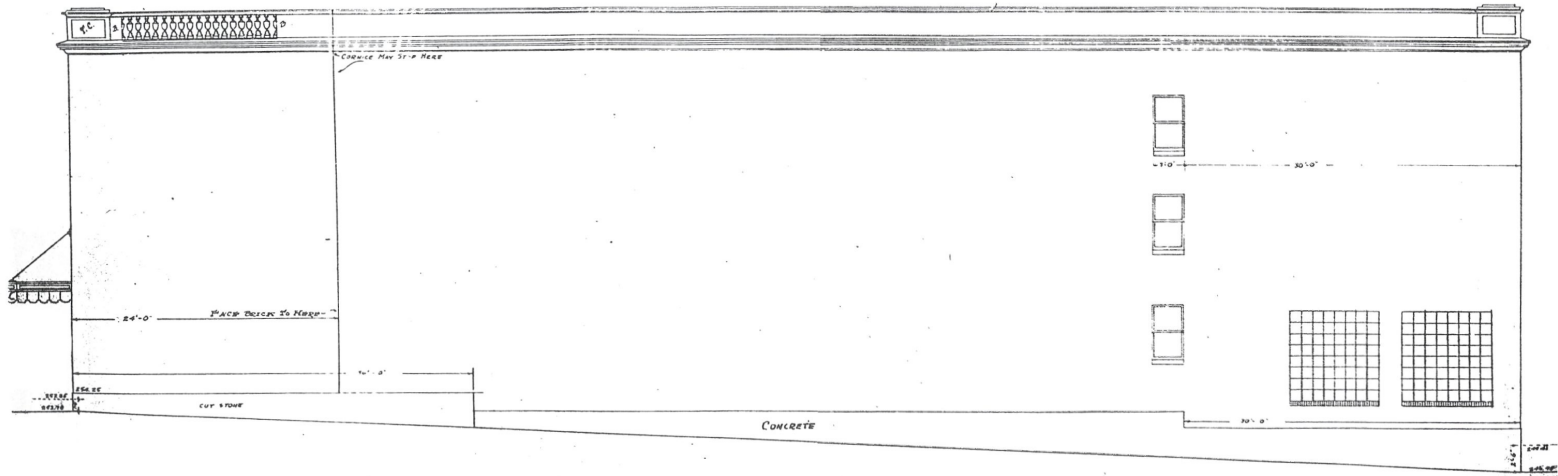


Diagram 2: West Elevation



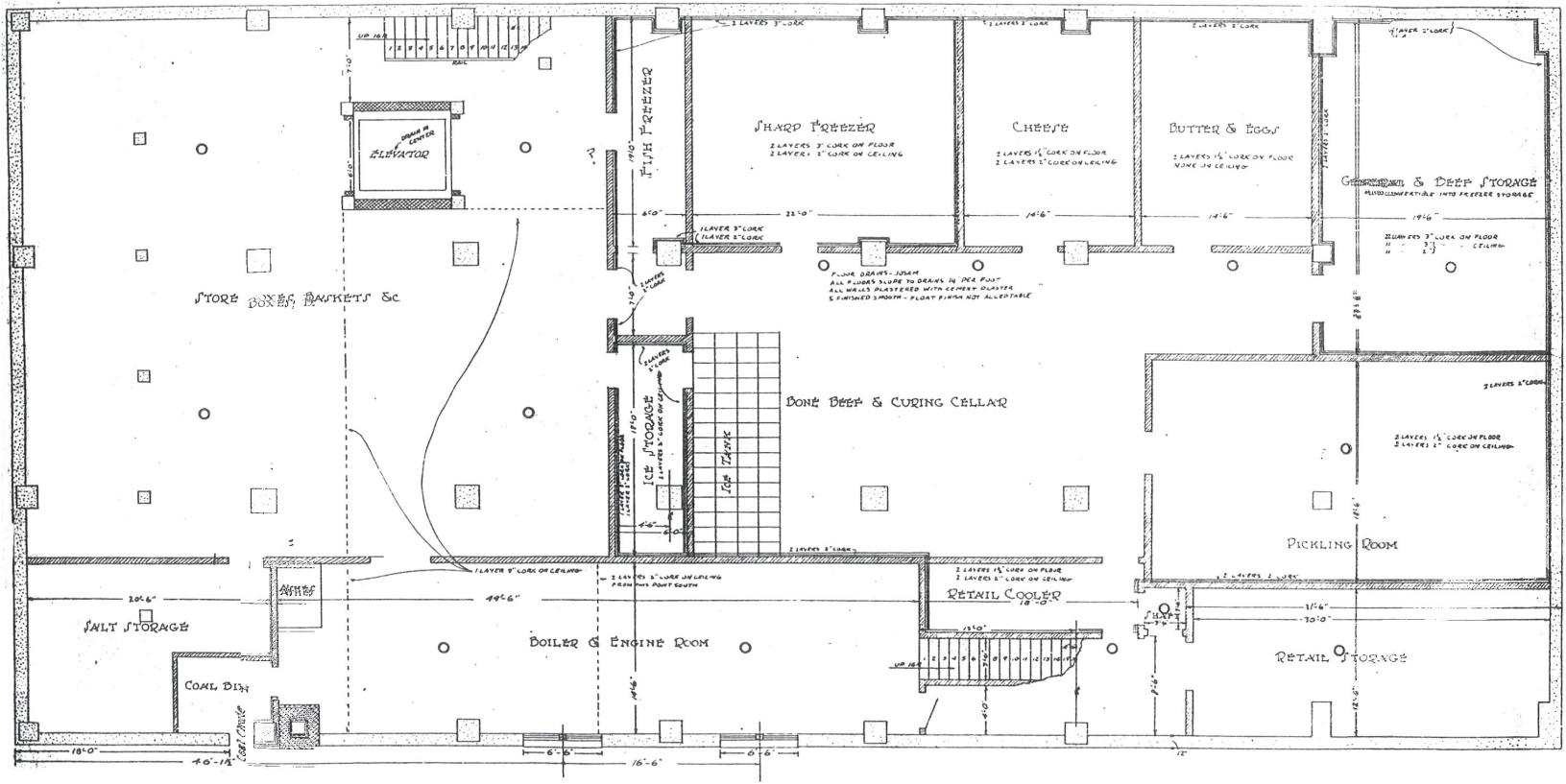
EAST ELEVATION

BUILDING for LEVY BROF. M & D Co.
 PH ANTHONY, ARCHT
 M P DUFF, ENGR

SHEET No 3

AW Kueriss, De

Diagram 3: East Elevation



BASEMENT PLAN

BUILDING for LEVY Bros. M & P Co.

SHEET No. 1

Diagram 4: Basement Floor Plan

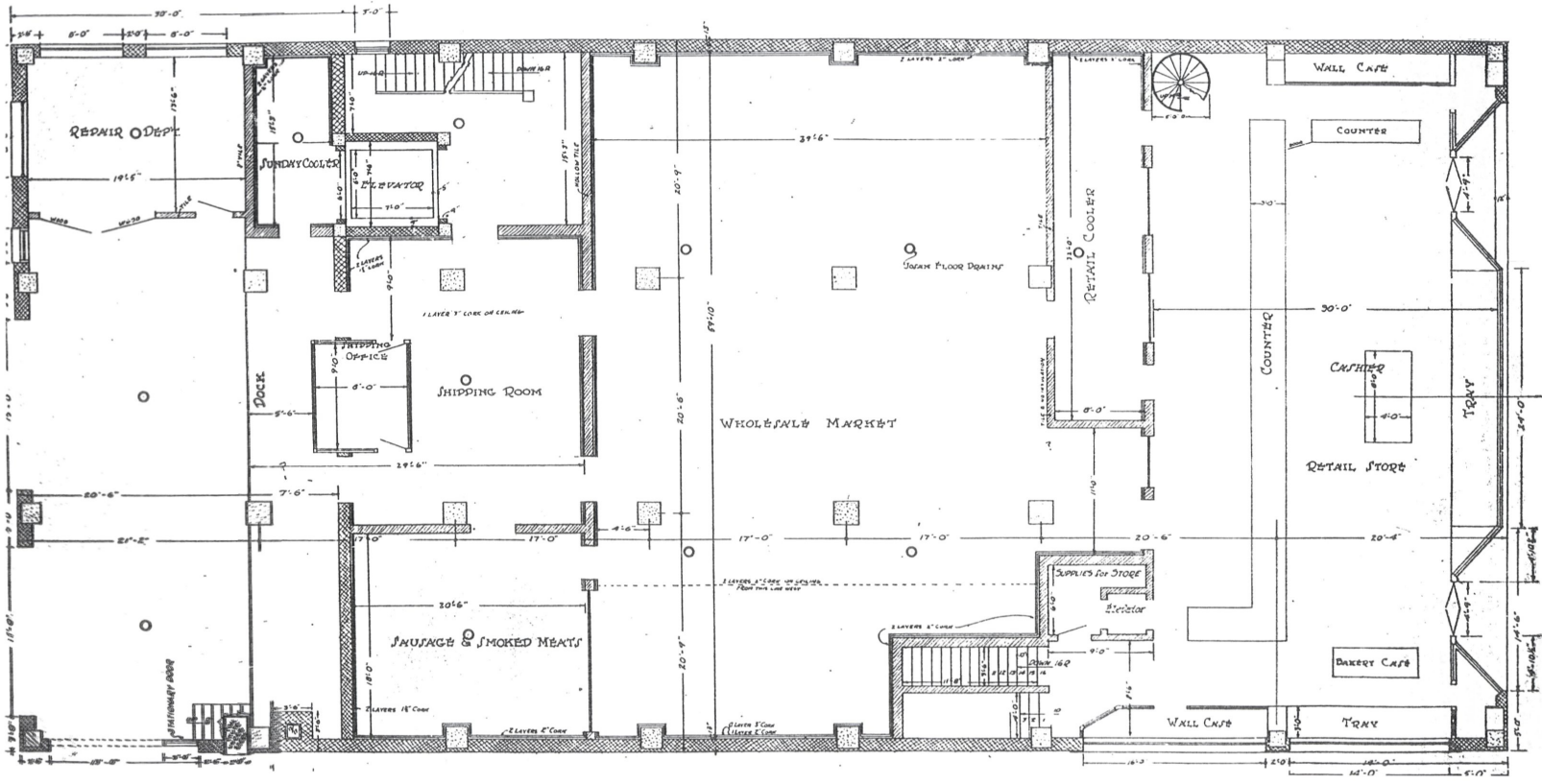


Diagram 5: First Floor Plan

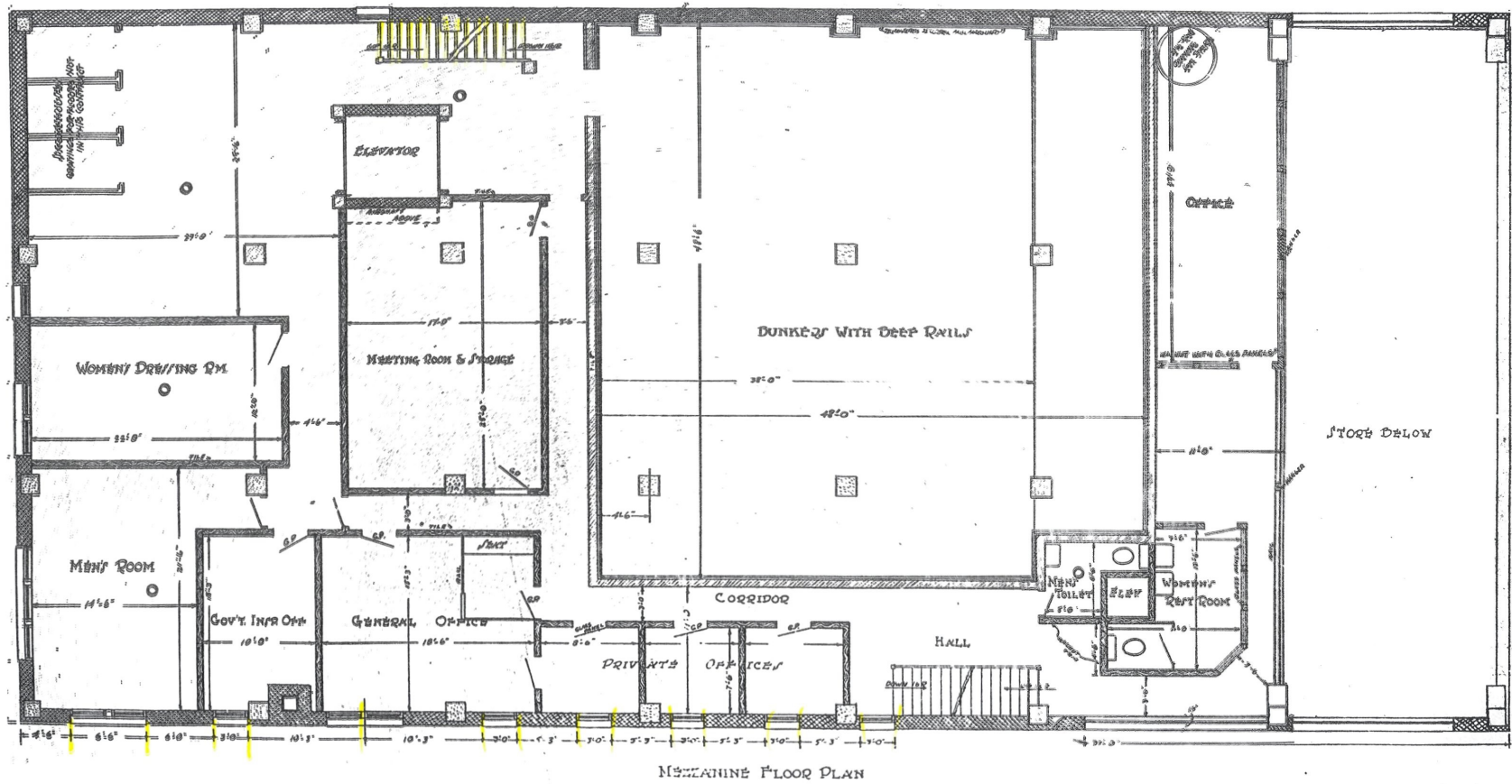
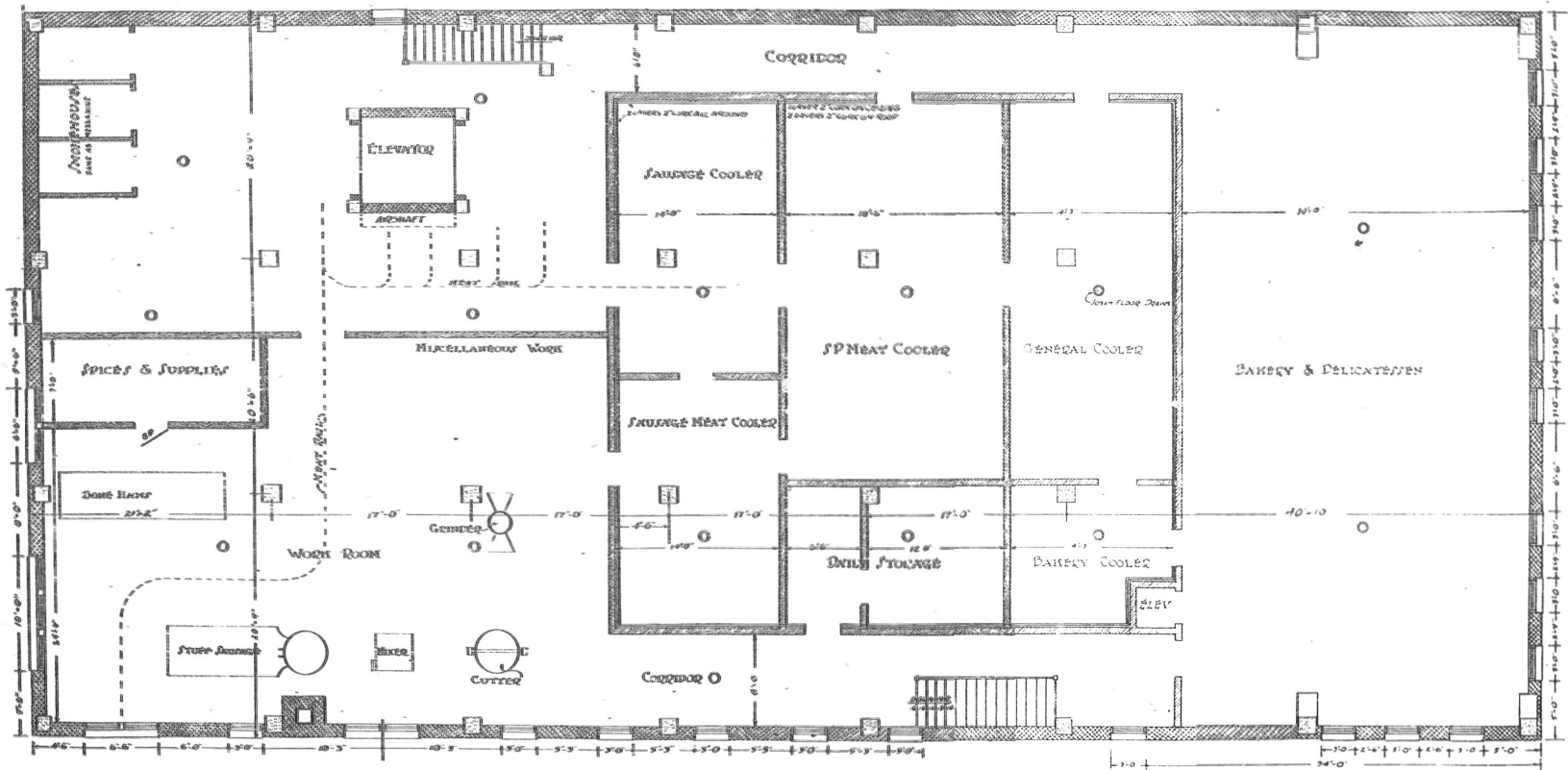


Diagram 6: Mezzanine Floor Plan



SECOND FLOOR PLAN

Diagram 7: Second Floor Plan

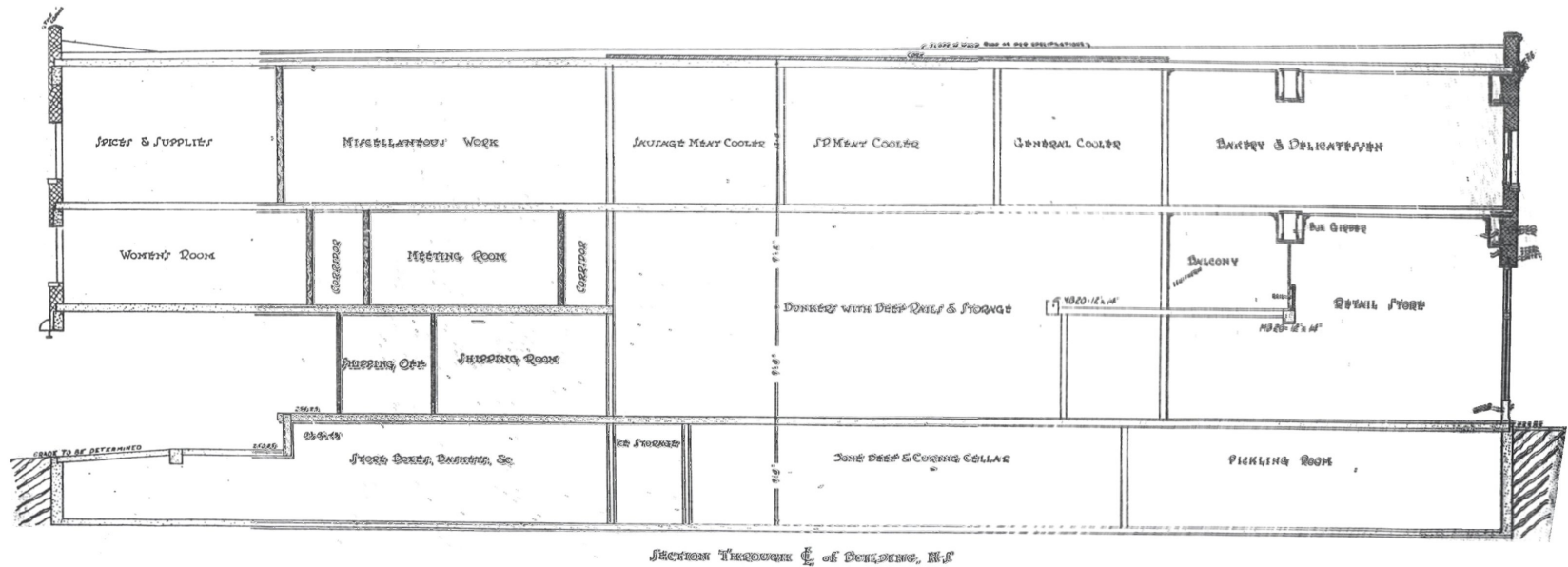


Diagram 8: Sectional Through Center Line North-South

Tax Abatements & Incentives

The Building is in three incentive groups:

- Gillham Row PIEA (Planned Industrial Expansion Authority) Ordinance # 041143 that provides for a 25-year tax abatement.
- Longfellow/Dutch Hill Neighborhoods Urban Renewal Plan, Ordinance # 081090 that provides for a 10-year tax abatement.
- Missouri State EEZ (Enhanced Enterprise Zone) that provides incentives for job creation and investment.

General Design Items

The general design items address areas not specifically mentioned in the LEED Specific Areas and general items of design and function.

1. Handicap Compliance

- 1.1. Handicap accessibility shall be addressed in the design to include parking, building entrance and general interior access. The elevator shall be the primary feature for handicap accessibility to interior floors. A lift will be used to access the exterior northeast deck. A ramp could be an alternative to the lift.
- 1.2. Theater seating shall be provided for wheelchair access allowing a space for non-motorized and motorized wheelchair parking next to a standard seat. Theater seating shall be movable to allow for arranging for both event adjustment and handicap accessibility.

2. Food Service

- 2.1. A restaurant, full menu kitchen will be designed for service in the building. The kitchen will be convenient to the loading dock and have local storage for all food items and liquor.
- 2.2. All kitchen appliances will be energy star rated. All appliances will be “smart” and programmable to perform scheduled functions (i.e. Ice making) during non-peak power grid usage.
- 2.3. The existing dumbwaiter will be used as a service lift between bars in different floors.

3. Parking and Vehicle Traffic.

- 3.1. The parking area will utilize sustainable design to contain runoff and provide as much green space as possible.

- 3.1.1. Pervious concrete will be used on all driveways and walkways that do not use a gravel base topping. Pervious concrete allows for easy rain penetration into the ground to prevent runoff. This also allows easier collection of rain waters for rain harvesting systems.
- 3.2. Parking will include spaces for bicycles, eco friendly cars, reserved spots for car pool groups and motorcycles. There shall be an area around the north and east side of the building that allows for limousine and taxi service.
- 3.3. Handicap parking shall be convenient to access ramps and provide cover from weather.
- 3.4. Parking area pedestrian walkways shall be of sustainable design, provide areas of rest and seating in green areas.

4. Design Specific Detail

- 4.1. The building shall be designed with an identity to recreate and maintain historical significance.
- 4.2. General Office rental space shall be included along with general use areas for office and customer space.
- 4.3. A green roof-deck shall be designed to take advantage of the city view.
- 4.4. Theater shall contain lounge style seating to include plush red leather recliners, sofas and sectionals. The seating shall be movable to allow for easy arrangement for events and addition of extra seating for larger events.
- 4.5. The theater shall contain curtains for the screen and other areas that permit light (natural or artificial) to enter the viewing areas.
- 4.6. Theater projection and sound equipment will be a high-end consumer product instead of movie industry standard. The use of DVD and Blu-ray will be used.
- 4.7. A live performance area will be included in the design of the building.
- 4.8. A standard multi-use auditorium will be included in the design for large events.
- 4.9. The recreation of the original storefront will be the focus of the main bar.

5. Historical Preservation and Tax Abatements

- 5.1. The project will research Chapter 353 Tax Abatement under the Missouri Department of Economic Development as applicable.
- 5.2. The project will research tax abatements under The Economic Development Corporation of Kansas City, Missouri.
- 5.3. The project will research issues and compliance with Ordinance No. 081090 Longfellow/Dutch Hill Neighborhoods Urban Renewal plan.

6. Area and Function Designs.

- 6.1. The Building consists of six distinct levels in the building. These include the (1) Basement, (2) First Floor (3) Mezzanine Floor, (4) Second Floor, (5) Warehouse Roof, (6) Second Floor Roof. The property lot is 09 acres measuring approximately 320 feet x 120 feet for 40,676 sq/ft. The building occupies about 10,337 sq/ft footprint or 25% of the lot footage.
- 6.2. The original building occupancy space is listed at 23,360 sq/ft. The additional occupancy space generated from the warehouse event space and decks on the two roofs increases the space by 9,149 sq/ft or 40% to 32,509sq/ft.
- 6.3. As a multi-use building, consideration had to be given to the various uses at any time to calculate load capacity and the number of facilities (Restrooms, lavatories, and drinking fountains) needed in the building for each floor. The new designs for the building provide the following areas and general square footages.

6.4.	<u>Basement Area</u>	<u>Sq/ft</u>	
6.4.1.	General Use Open Area.....	2,747	
6.4.2.	Utility area.....	1,300	
6.4.3.	Storage and Multi-Use 1.....	1,105	
6.4.4.	Storage and Multi-Use 2.....	752	
6.4.5.	Women's Lounge.....	596	
6.4.5.1.		Sq/ft & Load	6,500
6.5.	<u>First Floor</u>	<u>Sq/ft</u>	
6.5.1.	Open Dinning.....	1,165	
6.5.2.	Kitchen.....	611	
6.5.3.	Movie Theater.....	1,812	
6.5.4.	Main Bar and Storefront.....	1,639	
6.5.5.	Event Space.....	1,972	
6.5.6.	External NE Deck.....	1,500	
6.5.6.1.		Sq/ft & Load	8,699
6.6.	<u>Mezzanine</u>	<u>Sq/ft</u>	
6.6.1.	Office Space 1.....	260	
6.6.2.	Office Space 2.....	440	
6.6.3.	Office Space 3.....	343	
6.6.4.	Social Area & Office Waiting.....	1,500	
6.6.5.	Theater Side Balcony.....	369	
6.6.6.	Bar Side Balcony & Bar.....	540	
6.6.6.1.		Sq/ft & Load	3,452
6.7.	<u>Second Floor</u>	<u>Sq/ft</u>	
6.7.1.	Games and Billards.....	2,670	
6.7.2.	Second Floor Bar & state.....	1,900	
6.7.3.	Green Room.....	586	
6.7.4.	Internet Lounge.....	443	

6.7.5. French Balcony.....	169
6.7.5.1.	Sq/ft & Load 5,768
6.8. Roof	Sq/ft
6.8.1. Second Floor Roof Deck.....	6,185
6.8.2. Warehouse Roof.....	1,000
6.8.2.1.	Sq/ft & Load 6,000

LEED Specific Areas

This area will address items related to the six main areas of the LEED certification: Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources, Indoor Environmental Quality, and Innovation & Design Process. Each of the project area will be discussed with the overall effort to achieve those points. Suggested products and/or manufacturers will be given.

7. Sustainable Sites

- 7.1. The plan will have an erosion and sedimentation control (ESC) plan that will comply with the EPA Construction General Permit and/or local code.
- 7.2. The site selection is a brown field building that is considered blighted under Kansas City ORDINANCE NO. 081090. The building is a 1930 construction in stable condition that will allow renovation.
- 7.3. The development of the building will add to the entertainment value of the Martini Corner entertainment area and provide for a community alternative for activities in the local communities.
- 7.4. The building is located directly on a KC Metro bus route stop.
- 7.5. The use of outdoor and indoor bicycle racks along with indoor changing rooms will be utilized for alternative transportation.
- 7.6. Parking areas will be reserved for use by car pools and some taxi or limousine use. The back drive area will be designed to accommodate limousine use and easy access to the building
- 7.7. The use of rain harvesting and green areas in the parking lot and roof will restore much of the natural green space as possible.

7.7.1.1. Recommended Products:

- 7.7.1.2. **GRAF® Rainwater harvesting solutions ECO-Plus Package** is recommended for providing potable water. The system collects rainwater and runoff in underground storage tanks. Modular systems are added inside the building that provide for filtering, conditioning and softening of water for potable use. The larger of the Carat S tanks provides for 1,700 US Gallons each. Two arrays of tanks can be located under the parking lots for the most

convenient maintenance options. The total capacity of the arrays will be 40,800 US Gallons.

- 7.7.1.3. **RainXchange™ Rainwater Harvest System by Aquascape, Inc.** is recommended for providing non-potable water use and a reserve for potable water. Non-potable water will be used for fountains, toilet flushing, lawn care, building maintenance, etc. This system provides for underground collection and storage of water with decorative walkways, fountains and other water works sitting on top. This system can be incorporate under and around each of the decorative fountains planned for the lot. The modular box systems provides for a variety of storage capacities to be designed and built along with easy maintenance. Each of the larger boxes stores 32 US Gallons. The recommended design of the combined systems for all fountains and building runoff will total 55,200 US Gallons.
- 7.8. The open space surrounding the building will be kept open with green and sustainable design parking and walkways as much as possible.
- 7.9. Rainwater harvesting will be used to keep a majority of the rainfall on the site. This water will be used for on-site water fountains, flushing toilets and other non-potable water use. Filters will be used to clean the water for potable water use.
- 7.10. The roof will be designed as a green roof for use with a deck that provides for additional entertainment and a city view. Water works and falls will be incorporated to add to the cooling effects and aesthetics.
- 7.11. One-hundred percent (100%) of the available roof area will be used for the green roof decking and entertainment.
- 7.12. Use of technology that will keep electrical and lighting use to a minimum will be incorporated for both interior and exterior lighting. Technologies such as compact fluorescence, LED, OLED and low energy high efficiency lighting. The plan will strive to achieve exterior lighting sections of the ASHRAE/IESNA Standard 90.1-2004 and other standards.

8. Water Efficiency

- 8.1. Use of native plants and trees will reduce the need for additional watering for scenery and shading.
- 8.2. In conjunction with the use of native species plants and trees, the use of rain harvesting has the goal of reducing the need of potable water to near zero.
- 8.3. The use of dual flush toilets and waterless urinals will reduce the need of water usage in the building. Estimated reduction should exceed 30%.
- 8.4. The use of dual flush toilets and waterless urinals will reduce the need of water usage in the building. Estimated reduction should exceed 30%.

- 8.5. The use of dual flush toilets and waterless urinals will reduce the need of water usage in the building. Estimated reduction should exceed 30%.
- 8.6. New plumbing will be installed that will separate black and grey waters for disposal and reclamation.
 - 8.6.1. Black water options for recycling using septic tanks or swamp areas were dropped from inclusion in the project. Black water will be channeled into the city sewer system. Although in-house black water processing systems are available, the possibility of systems going wrong due to poorly selected cleaning supplies may be too high a risk in the environment for the Building.
 - 8.6.2. Grey water recycling was designed in the project. This consists of installing separate plumbing systems to transport all grey waters to a two stage processing system. The first stage consists of a sand filter system located under the outside northeast deck. The second stage consists of all the native plants and garden systems throughout the north lot section.

9. Energy & Atmosphere

- 9.1. For HVAC systems, a qualified commissioning agent (CxA) will be chosen to review the owner's project requirements (OPR) and basis of design (BOD) for clarity and thoroughness. The CxA will provide the written commissioning requirements to be included in the construction documents. Systems will include all passive and mechanical energy systems with respective controls that function to heat, ventilate, air-condition, refrigerate, provide light, hot-water, and renewable energy supply systems.
- 9.2. The project design will exceed the ASHRAE/IESNA Standard 90.1-2004 for energy-related systems and performance.
- 9.3. In order to reduce ozone depletion, HVAC&R systems will use other alternatives than CFC-based refrigerants. Geothermal will be an evaluated alternative or addition to the heating cooling system. Zoned heat pumps will be utilized to allow heating and cooling of selected areas.
- 9.4. Computer based simulation software will be used for energy simulations to evaluate and adjust the buildings energy performance. The software provided by the U.S. Department of Energy, "eQuest" will be the recommended software, or equivalent product.
- 9.5. Renewable energy options will be included as part of the building renovations. Use of solar voltaic cell and solar heating will be included as options. Use of wind energy sources will be included in a manner that will enhance the features of the site as well as reduce reliance on commercial energy providers.

9.5.1. Parking lot lighting and external lighting will be LED design and powered by solar cell and/or wind energy. Energy produced during the day will be stored in battery banks located in the utility area of the basement.

9.5.2. Micro Wind Turbines will be used to provide power. Three or more turbines should be located on the property to provide approximately 7KW.

9.5.2.1. Recommended Products:

9.5.2.1.1. Philippe Stark or similar design

9.5.3. Solar cell panels will be mounted in areas including top or motorcycle awning port and sides of second floor parapets on south, east and west sides. Total collective power should be 9.6KW to 12KW.

9.5.3.1. Recommended Products:

9.5.3.1.1. Suniva ART300-72 Monocrystalline Solar Modules

9.5.4. Energy producing floor tiles (piezoelectric) will be used in at least six internal areas where traffic is highest. Tiles can also be incorporated outside where pedestrian and vehicle traffic is highest. Tiles that produce 25W per square foot per hour for 10-hours of traffic use at 70% would produce 1,500 KWs. Target areas for tiles are First Floor Event Space, First Floor Ice Cream Bar, Mezzanine Balcony Bar, Mezzanine Social Area, Second Floor Performance Bar, and Second Floor Game Room.

9.5.4.1. Recommended Products:

9.5.4.1.1. POWERleap (<http://powerleap.net>)

9.6. The CxA will be included in the design phase for the final project documentation prior to construction. Since the CxA is not part of the ITT D&D Capstone project, the earliest that the CxA can be involved in the project is the point after the Capstone and prior to project ground breaking.

9.7. The project refrigerant management program will comply with the Montreal Protocol on the use of man-made chemicals.

9.8. A measurement and verification plan will be implemented to log and check the energy efficiency of all required equipment in the building. Automatic computer log records should be used to allow analysis of data for efficiency and performance over the age of the equipment for the duration of its useful life.

9.9. Any local supplier of renewable energy will be contracted to at least two years to provide at least 35 percent of the electricity.

10. *Materials & Resources*

10.1. Design in systems will be incorporated into the building to make recycling feasible for occupants and clients. Separate containers for the recycling of all corrugated

cardboard, plastic, metal, glass and paper will exist and a method to separate materials from general collection bins will be implemented that allows for recycling of all materials.

- 10.2. Rechargeable batteries and devices shall be used for all devices powered by batteries.
- 10.3. The renovation will strive to achieve 95% of existing walls, floors and Roof for reuse. A tracking chart and log will be used to verify the reuse percentage. The demolition of the stand-alone garage may negate the 100% reuse rating. This will be verified.
- 10.4. A plan to manage the construction debris will be implemented on site. It will be recommended that all deconstruction debris and materials be kept on-site where they will be separated and tagged for reuse or sent to recycling sites. The goal will be to achieve between 50 percent and 75 percent of all construction debris to be reutilized, recycled, or sent to habitat restore facilities.
- 10.5. In coordination with construction waste management, must existing materials and items such as beams, posts, cabinetry, doors, lumber, fixtures, and like will be reutilized in the renovation. A detail log of items with current replacement values will be kept for audit purposes. The goal will be to achieve a reuse of 10 percent or more of items.
- 10.6. All new construction material will be manufactured from recycled materials. The ISO 14201 – Environmental labels and declarations – Self-declared environmental claims (Type II environmental labeling) will be used to recommend and select materials.
- 10.7. Supplies of products that are manufactured, processed or extracted materials shall physically exist within a 500-mile radius of the job site. A goal of 20 percent or more of such all installed materials will be from the Kansas City, Missouri and Kansas City, Kansas market and all others will be kept within the 500-mile radius.
- 10.8. Materials used in the renovation, whether supplied by third or second parties or manufactured locally on site, shall be from rapidly renewable resources. This shall include but not be limited to linoleum, cork, wheatboard, wool, cotton and other resources considered rapidly renewable under the LEED standards.
- 10.9. No less than 50 percent of all installed wood products shall be provided by a recognized sources such as the Forest Stewardship Council (FSC) Programme for the Endorsement of Forest Certification schemes programs (PEFC), American Tree Farm System (ATFS), the Canadian Standards Association (CSA), or the Sustainable Forestry Initiative (SFI) Program

11. *Indoor Environmental Quality*

- 11.1. The design shall meet ASHRAE Standard 62.1-2004, Section 4-7, "Ventilation for Acceptable Indoor Air Quality" or local code, whichever is stricter. The building shall contain operable windows that allow for natural ventilation and cooling.
- 11.2. The design for tobacco use shall comply with Local smoking ordinances and the LEED requirements. Optional areas for tobacco use shall include the following:
 - 11.2.1. Limited smoking sections outside the building or on the roof-deck and shall be at least 25 feet from any building air intake.
 - 11.2.2. An optional smoking room will be converted or constructed that has a designed exhaust system to capture all smoke from the room and evacuate it to the outside. The room shall be kept at a negative pressure to prevent smoke escape into the building.
 - 11.2.3. As a multi-use building, the area will be considered densely occupied at peak loads. Monitoring equipment shall be utilized with ventilation systems to insure proper working order and efficiency. Any variations by 10 or more shall alarm so management may take proper action. Carbon dioxide monitors shall be installed throughout the building.
 - 11.2.4. Natural ventilation shall be used as much as possible. The process shall be reviewed in accordance with the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual 10:2005.
 - 11.2.5. All materials will be delivered for use just in time (JIT) and stored in a proper location to prevent damage from physical means or weather conditions.
 - 11.2.6. Installed temporary or permanent ventilation systems for use during construction shall meet the Sheet metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction.
 - 11.2.7. Filters shall be placed on all ventilation systems that meet the Minimum Efficiency Reporting Value (MERV) of 8 at return air grilles. The filters will be replaced before occupancy and the entire building and ductwork shall be flushed.
 - 11.2.8. All adhesives and sealants shall be low volatile organic compound (VOC) and comply with the South Coast Air Quality Management District (SCAQMD) Rule 1168 and the Green Seal S for Commercial Adhesives GS-36.
 - 11.2.9. All interior Paints shall comply with the Green Seal Standard GS-11. All antirust and anticorrosive paints shall comply with the Green Seal Standard GC-03. All clear wood finishes and stains shall comply with the SCAQMD Rule 113.
 - 11.2.10. All carpet systems and cushion shall comply with the Carpet and Rug Institute's Green Label Plus program.

- 11.2.11. All composite wood and agrifiber products or adhesives shall be free from urea-formaldehyde resins.
- 11.2.12. Building entrances shall incorporate a walk-off mat or grate-grill system that is serviceable and cleanable with ease.
- 11.2.13. A storage room(s) shall be designed to contain hazardous materials and contain their fumes. Rooms shall have negative air pressure and properly filtered and vented. Doors shall be self-closing. Ceilings shall be deck or hard lid.
- 11.2.14. Energy saving technology shall be installed in the building that allows for the following.
- 11.2.15. Sensors on all lighting that dims and/or turns off lights when unoccupied.
- 11.2.16. Adjusts the light level according to the amount of natural light present.
- 11.2.17. Allows for the adjustment of lighting, both natural and illuminated by the occupant.
- 11.2.18. Spot lighting and uni-directional lighting shall be used where possible.
- 11.2.19. Omi-directional lighting shall be kept to a minimum.
- 11.2.20. Heating and cooling shall be zoned so each area or occupant can control individual comfort for air and radiant temperature, air speed, and humidity. The ASHRAE Standard 55-2004 shall be used as a reference for thermal comfort.
- 11.2.21. Use of bi-directional ceiling fans and wall fans shall be used for air circulation. Duct work shall allow for the transfer of air from area to area for balancing temperature and air.
- 11.2.22. The design shall give rental office occupants daylight and outside views. Daylight shall be documented and demonstrated to an acceptable standard.

12. Innovation and Design

- 12.1. Refrigeration and ice making equipment shall run during off-peak hours. A computer control system shall be used to automatically control vocalization and air conditioning of the building to meet occupant's needs while managing overall efficiency. System shall control such items as adjusting windows, opening and closing windows, adjusting airflow, adjusting lighting systems, adjusting humidity, and keeping records and logs for audit trails and verification.
- 12.2. Design research shall include historical and educational plaques. Historical significance shall focus on, but not be limited to the following:
 - 12.2.1. Construction history and occupancy of the building
 - 12.2.2. 1930's Levy Brothers Meat & Provision Company.
 - 12.2.3. Velvet Freeze Ice Cream

12.2.4. Longfellow Community

12.2.5. Martini Corner and surrounding communities.

12.2.6. Velvet Freeze Project

12.2.7. Murals and artwork shall be of style and designs of the 1930's through the 1960's as related to the history of the building under occupancy of the Levy Brothers and Velvet Freeze.

13. Tables and Calculations

13.1. Total Sustainable Energies in System

Total Sustainable Energies in System

Per hour/Kw

Variable	Minimum	Median	Maximum
Micro Wind Turbines	4	6	8
Solar Cells	9	11	13
PowerLeap Tiles (5W tile)	21.8	30.5	34.8
Total	34.8	47.5	55.8

13.1.1. POWERleap Piezoelectric Floor Tiles

POWER PER 1 PERSON/HOUR LOCATION	100% EFFECIENCY FACTORS							
	AREA	5 W	25 W	50 W	100 W	200 W	400 W	500 W
FIRST FLOOR EVENT SPACE	1,600	8,000	40,000	80,000	160,000	320,000	640,000	800,000
FIRST FLOOR ICE CREAM BAR	850	4,250	21,250	42,500	85,000	170,000	340,000	425,000
MEZZANINE BALCONY BAR	600	3,000	15,000	30,000	60,000	120,000	240,000	300,000
MEZZANINE SOCIAL AREA	1,600	8,000	40,000	80,000	160,000	320,000	640,000	800,000
SECOND FLOOR PERFORMANCE BAR	1,590	7,950	39,750	79,500	159,000	318,000	636,000	795,000
SECOND FLOOR GAME ROOM	2,480	12,400	62,000	124,000	248,000	496,000	992,000	1,240,000
TOTAL ALL FLOORS	8,720	43,600	218,000	436,000	872,000	1,744,000	3,488,000	4,360,000

POWER PER 1 PERSON/HOUR LOCATION	80% EFFECIENCY FACTORS							
	AREA	5 W	25 W	50 W	100 W	200 W	400 W	500 W
FIRST FLOOR EVENT SPACE	1,600	6,400	32,000	64,000	128,000	256,000	512,000	640,000
FIRST FLOOR ICE CREAM BAR	850	3,400	17,000	34,000	68,000	136,000	272,000	340,000
MEZZANINE BALCONY BAR	600	2,400	12,000	24,000	48,000	96,000	192,000	240,000
MEZZANINE SOCIAL AREA	1,600	6,400	32,000	64,000	128,000	256,000	512,000	640,000
SECOND FLOOR PERFORMANCE BAR	1,590	6,360	31,800	63,600	127,200	254,400	508,800	636,000
SECOND FLOOR GAME ROOM	2,480	9,920	49,600	99,200	198,400	396,800	793,600	992,000
TOTAL ALL FLOORS	8,720	34,880	174,400	348,800	697,600	1,395,200	2,790,400	3,488,000

POWER PER 1 PERSON/HOUR LOCATION	70% EFFECIENCY FACTORS							
	AREA	5 W	25 W	50 W	100 W	200 W	400 W	500 W
FIRST FLOOR EVENT SPACE	1,600	5,600	28,000	56,000	112,000	224,000	448,000	560,000
FIRST FLOOR ICE CREAM BAR	850	2,975	14,875	29,750	59,500	119,000	238,000	297,500
MEZZANINE BALCONY BAR	600	2,100	10,500	21,000	42,000	84,000	168,000	210,000
MEZZANINE SOCIAL AREA	1,600	5,600	28,000	56,000	112,000	224,000	448,000	560,000
SECOND FLOOR PERFORMANCE BAR	1,590	5,565	27,825	55,650	111,300	222,600	445,200	556,500
SECOND FLOOR GAME ROOM	2,480	8,680	43,400	86,800	173,600	347,200	694,400	868,000
TOTAL ALL FLOORS	8,720	30,520	152,600	305,200	610,400	1,220,800	2,441,600	3,052,000

POWER PER 1 PERSON/HOUR LOCATION	50% EFFECIENCY FACTORS							
	AREA	5 W	25 W	50 W	100 W	200 W	400 W	500 W
FIRST FLOOR EVENT SPACE	1,600	4,000	20,000	40,000	80,000	160,000	320,000	400,000
FIRST FLOOR ICE CREAM BAR	850	2,125	10,625	21,250	42,500	85,000	170,000	212,500
MEZZANINE BALCONY BAR	600	1,500	7,500	15,000	30,000	60,000	120,000	150,000
MEZZANINE SOCIAL AREA	1,600	4,000	20,000	40,000	80,000	160,000	320,000	400,000
SECOND FLOOR PERFORMANCE BAR	1,590	3,975	19,875	39,750	79,500	159,000	318,000	397,500
SECOND FLOOR GAME ROOM	2,480	6,200	31,000	62,000	124,000	248,000	496,000	620,000
TOTAL ALL FLOORS	8,720	21,800	109,000	218,000	436,000	872,000	1,744,000	2,180,000

13.2. Total Water Harvesting

GRAF Tank

1700 US Gals

12 Tanks per Array

20,400 US Gals per Array

2 Total Arrays

40,800 US Gals

RainXchange

32 US Gal per box

Corner Falls

123 # Boxes

3 layers

369 Total Boxes

11,808 Total Gals

South Face Sun Falls

92 # Boxes

3 layers

276 Total Boxes

8,832 Total Gals

Ice Cream Cone Falls

144 # Boxes

3 layers

432 Total Boxes

13,824 Total Gals

Building Runoff

216 # Boxes

3 layers

648 Total Boxes

20,736 Total Gals

Total RainXchange System and Capacity

1,725 Total Boxes

55,200 Total Gals

13.3. Occupancy

Type 1	Load concentrated	7	sq/ft per person
	Male Stalls	125	
	Female Stalls	65	
	Lavatories	200	
	Drinking Fountains	200	
Type 2	Load less concentrated	15	sq/ft per person
	Male Stalls	75	
	Female Stalls	75	
	Lavatories	200	
	Drinking Fountains	500	
Type 3	Business	100	sq/ft per person
	Male Stalls	50	
	Female Stalls	50	
	Lavatories	80	
	Drinking Fountains	100	

		Type 1 Load	Type 2 Load	Type 3 Load
Total Square Footage	31,725	4532	2115	317
	Male Stalls	36	28	6
	Female Stalls	70	28	6
	Lavatories	23	11	4
	Drinking Fountains	23	4	3

Basement Area	Sq/ft	Type 1 Load	Type 2 Load	Type 3 Load
General Use Open Area	4,353			
Storage and Multi-Use 1	1,105			
Storage and Multi-Use 2	752			
Women's Lounge	596			
Sq/ft & Load	6,806	972	454	68
	Male Stalls	8	6	1
	Female Stalls	15	6	1
	Lavatories	5	2	1
	Drinking Fountains	5	1	1

First Floor	Sq/ft	Type 1 Load	Type 2 Load	Type 3 Load
Open Dinning	1,165			
Kitchen	611			
Movie Theater	1,812			
Main Bar and Storefront	1,639			
Event Space	1,972			
External NE Deck	1,500			
Sq/ft & Load	8,699	1243	580	87
	Male Stalls	10	8	2
	Female Stalls	19	8	2
	Lavatories	6	3	1
	Drinking Fountains	6	1	1

Mezzanine	Sq/ft	Type 1	Type 2	Type 3
		Load	Load	Load
Office Space 1	260			
Office Space 2	440			
Office Space 3	343			
Social Area & Office Waiting	1,500			
Theater Side Balcony	369			
Bar Side Balcony & Bar	540			
Sq/ft & Load	3,452	493	230	35
Male Stalls		4	3	1
Female Stalls		8	3	1
Lavatories		2	1	0
Drinking Fountains		2	0	0

Second Floor	Sq/ft	Type 1	Type 2	Type 3
		Load	Load	Load
Games and Billards	2,670			
Second Floor Bar & state	1,900			
Green Room	586			
Internet Lounge	443			
French Balcony	169			
Green Roof	1,000			
Sq/ft & Load	6,768	967	451	68
Male Stalls		8	6	1
Female Stalls		15	6	1
Lavatories		5	2	1
Drinking Fountains		5	1	1

Roof	Sq/ft	Type 1	Type 2	Type 3
		Load	Load	Load
Entire Roof	6,000			
Sq/ft & Load	6,000	857	400	60
Male Stalls		7	5	1
Female Stalls		13	5	1
Lavatories		4	2	1
Drinking Fountains		4	1	1