

Repurposing Vacant Office Buildings as Affordable Housing and Community Centers.

Final Defense Presentation

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Class of 2023

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Why this topic?

Office Buildings



Affordable Housing



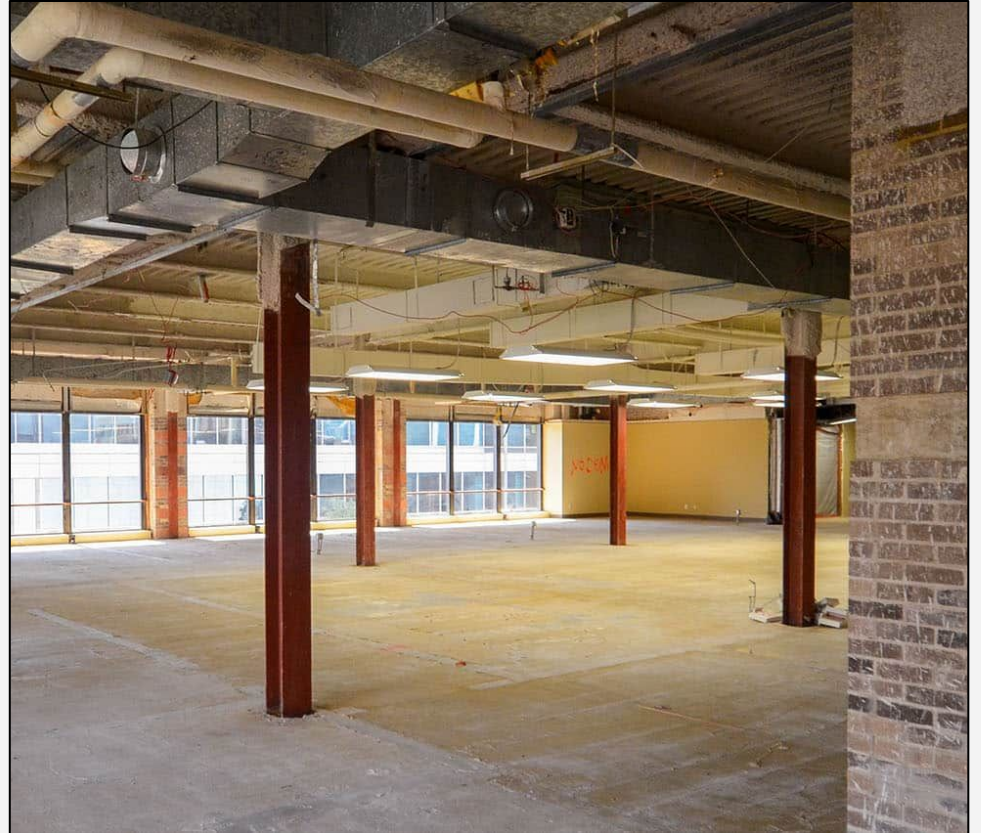
Sustainability



Literature Review Overview

Literature Review Goals:

- Evaluate existing literature and precedent
- Become familiar with topic strengths and challenges
- Find inspiration and ideation for my own research



Literature Review Overview



Barclay Building NYC



Tribune Tower
Chicago



Watermark Building
Washington DC

Literature Review Outcomes

Affordable Housing:

- Needed Especially in Urban settings
- Can be created using existing buildings previously used for other purposes

Fostering Connection in Urban Communities:

- Building community as well as new residential areas can spark economic growth
- Existing buildings are a viable option for a less expensive way to create a store or other occupancy that needs physical space

Climate Impact of Building Industry:

- Existing buildings use generally less new materials than new construction buildings
- Retrofitting existing buildings using modern design techniques can increase a building efficiency and longevity



Research Agenda Overview

Research Agenda Goals:

- Identify challenges related to the existing structures
- Identify technologies and renovation methods to increase energy efficiency
- Connect with industry professionals in order to receive feedback and insight to the specific conditions of the case study building.
- Evaluate the needs of the downtown Rochester, New York area community for a commercial / community occupancy.



Research Agenda - Office Buildings Evaluation

165-185 N Water St



216-222 South Ave



204 West Main Street



148 N Clinton Ave



1546 Lyell Ave



10 University Ave



Research Agenda Outcomes

20 North Union Street



1. Existing structure is outdated
2. Owners of structure are not highly motivated to sell
3. Area has over saturation of higher end housing
4. Building is prime example of the capstone topic



Brian Donovan
Real Estate Agent

Research Agenda - Informational Interviews

Interviewee 1:

Location: Portland, Maine

Profession: Sustainability Specialist

Education: Master in Architecture



Interviewee 2:

Location: Rochester, New York

Profession: Facility Space Planner,
Interior Designer, Project Manager

Education: Master in Interior Architecture



Interviewee 3:

Location: Rochester, New York

Profession: Architect, Project Manager

Education: Master in Architecture

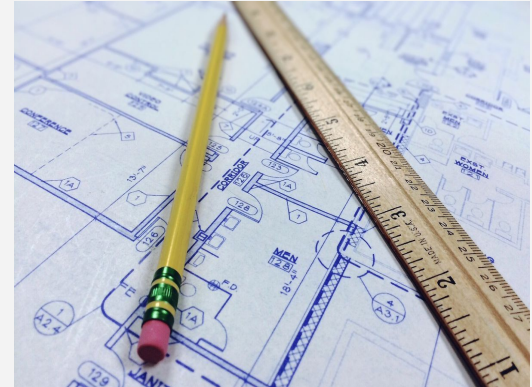


Interviewee 4:

Location: Rochester, New York

Profession: Associate, Interior Designer

Education: Bachelor in Interior Design



Interviewee 5:

Location: Maui, Hawaii

Profession: Interior Designer

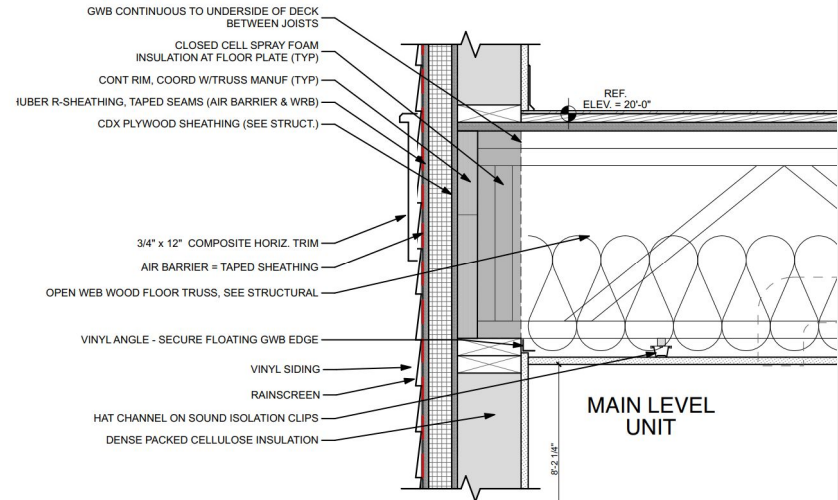
Education: Associate in Interior Design

Community Housing Resource Center



Utilizing Sustainable Building Methods

- Windows
- Doors
- Insulation
- Materials / Finishes
- Energy Creation
- Energy Consumption



Creative Agenda Project Statement

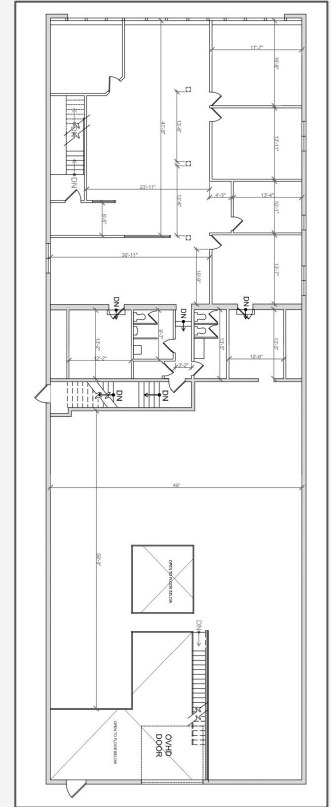
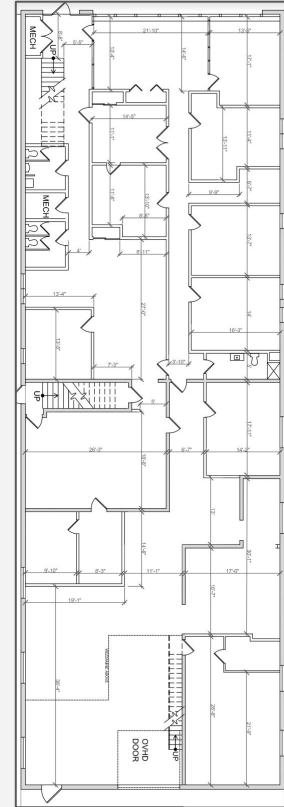
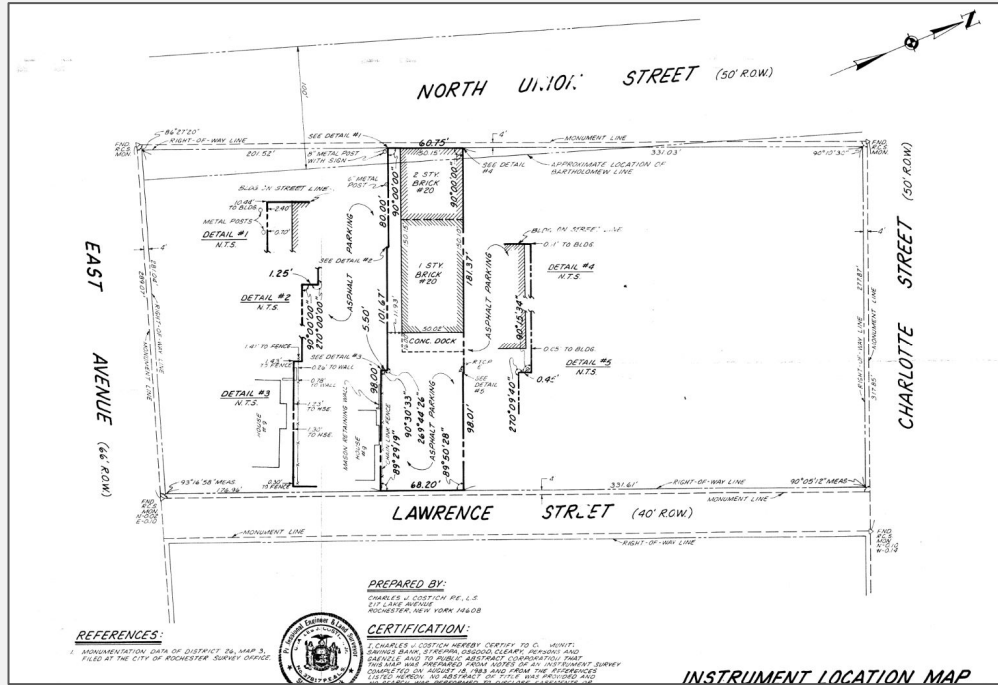
The North Union Apartments and Housing Resource Community Center will be a destination to live and spend time in, for local Rochesterians and those visiting the area. The building will act as a beacon to show a successful implementation of affordability, practicality, and sustainability for a reuse of an existing former office building as mixed use housing.

Creative Agenda Program (Goals and Objectives)

- Address community need through various apartment types and sizes
- Address the community income level and propose design that is in line with an associated budget
- Implement practical renovation strategies that were identified through research agenda
- Implement sustainable practices / technologies to utilize for the building
- Identify and implement a needed community center focus



Existing Floor Plans



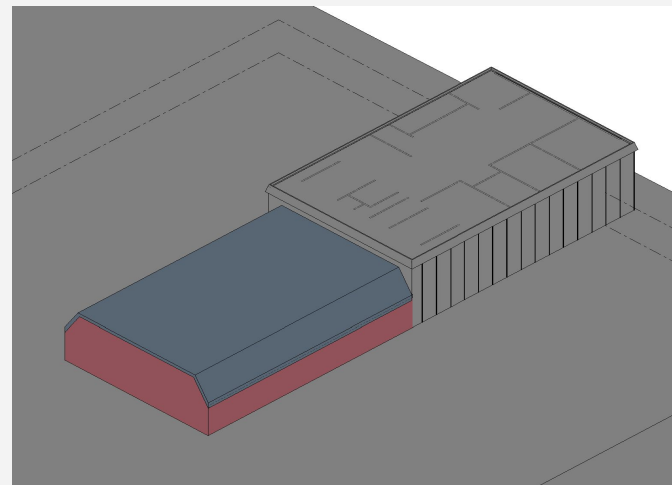
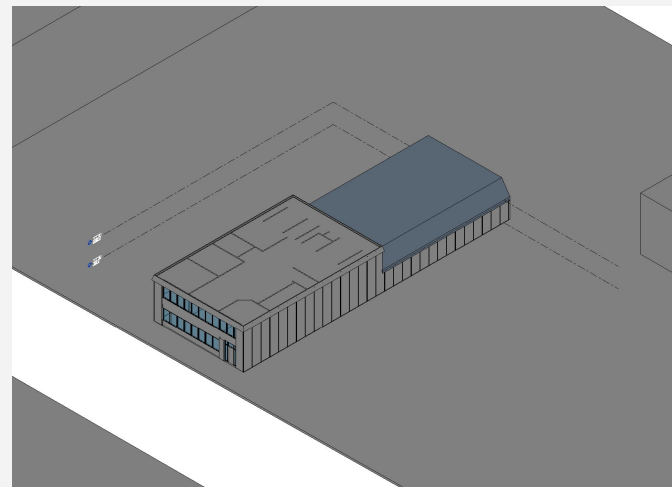
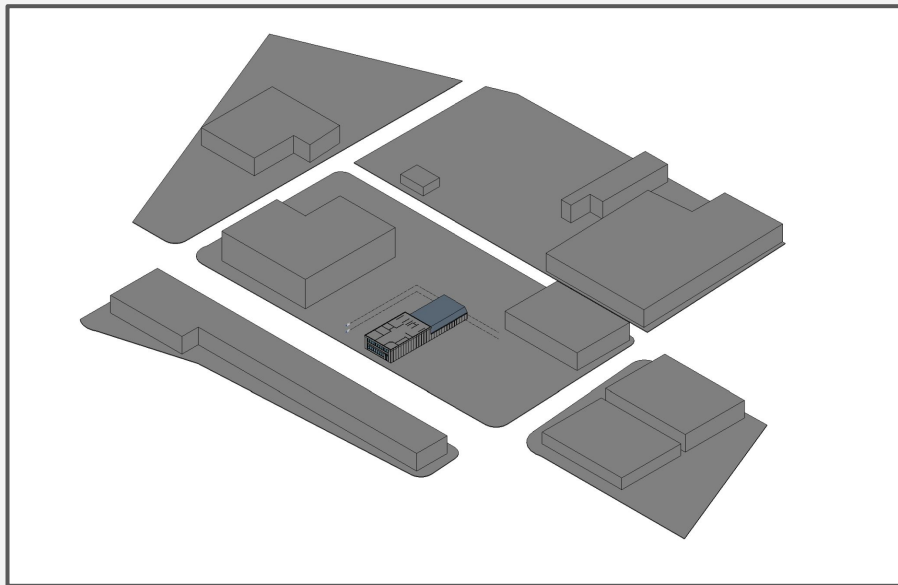
Existing Conditions Documentation



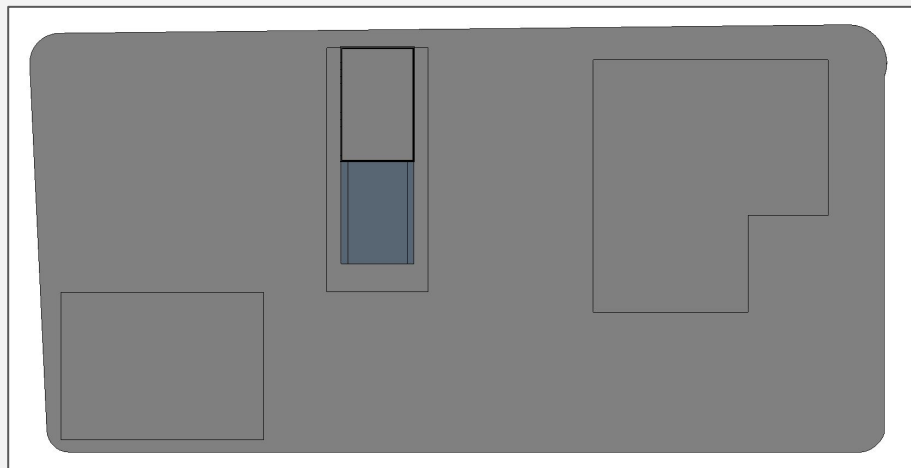
Existing Conditions Documentation



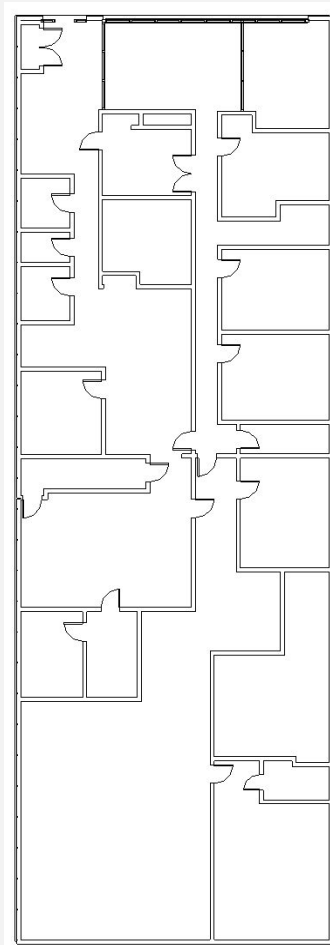
Existing Conditions Model



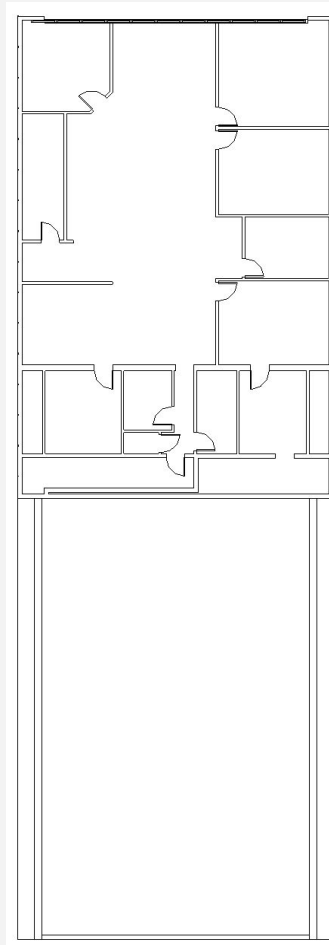
Existing Conditions Model



Site Plan



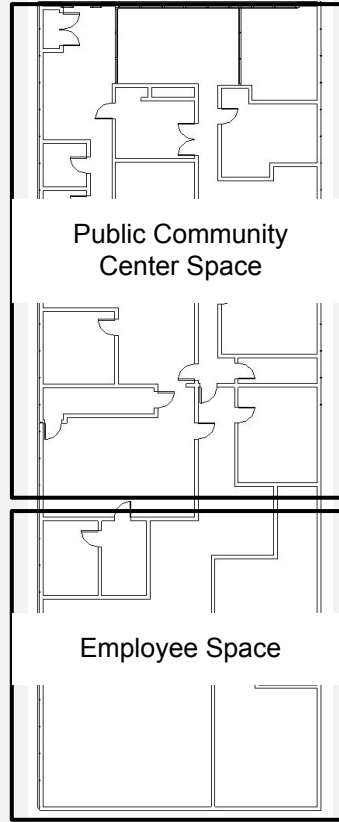
Level 1



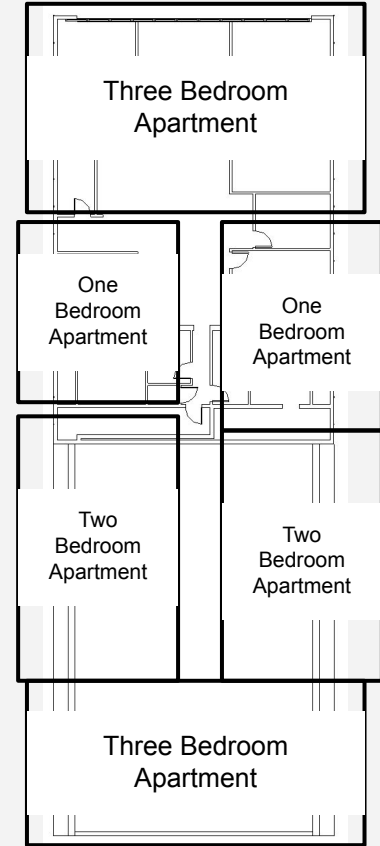
Level 2

Draft Renovations Plan

	A	B	C	D
1	1st Floor	SF		
2	Retail / Public Sp	4000		
3	Back of House	800		
4	Bathrooms	150		
5	Office Space	225		
6	Break / Lunch Rm	250		
7	Subtotal Square Footage			5425
8				
9				
10	2nd Floor	5425	Number of apt type	
11	1 Bedroom		2	
12	Living Room	150		
13	Kitchen	150		
14	Bathroom	100		
15	Hallway	100		
16	Bedroom	250		
17	Closet	50		
18	Total	800		
19				
20	2 Bedroom		2	
21	Bedroom 1	250		
22	Bedroom 2	250		
23	Living Room	150		
24	Kitchen	150		
25	Bathroom	100		
26	Hallway	100		
27	Closets	100		
28	Total	900		
29				
30	3 Bedroom		1	
31	Bedroom 1	250		
32	Bedroom 2	250		
33	Bedroom 3	250		
34	Living Room	150		
35	Kitchen	150		
36	Bathroom	100		
37	Hallway	150		
38	Closets	150		
39	Total	1450		
40				
41	Subtotal Square Footage		4850	
42	Corridors / Common Space		575	
43				5425



Level 1



Level 2

Creative Agenda Outcomes

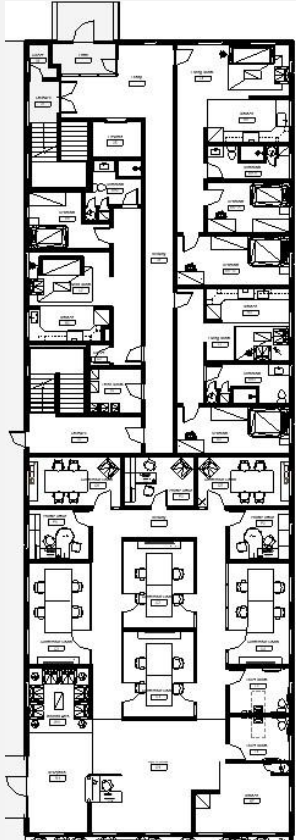
20 North Union Street Apartments
and Housing Resource Center



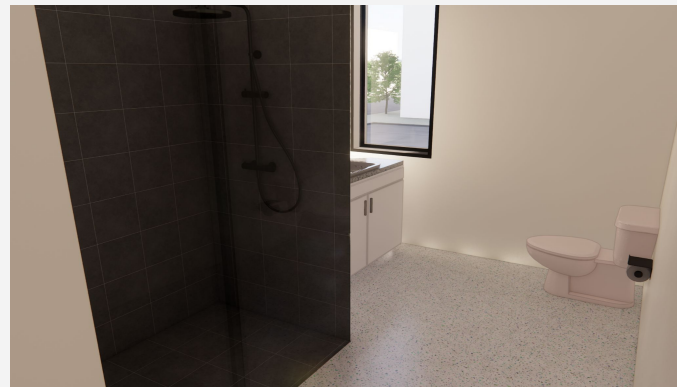
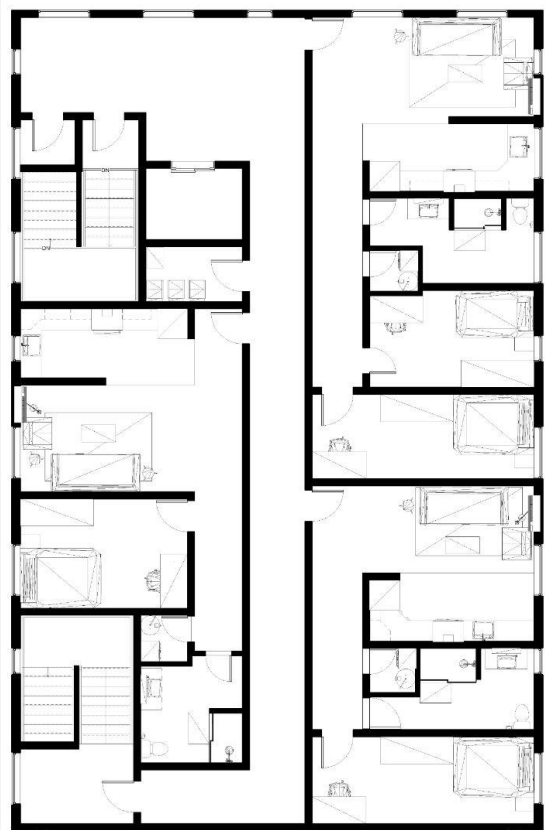
Site Plan



First Floor Plan



Second Floor Plan



Housing Resource Center



Conclusions - Final Thoughts

Office Buildings



Affordable Housing



Sustainability



Bibliography

Abramson, Daniel M. *Obsolescence an Architectural History*. The University of Chicago Press, 2017.

Allen, Peter. "The End of Modernism?: People's Park, Urban Renewal, and Community Design." *Journal of the Society of Architectural Historians*, vol. 70, no. 3, 2011, pp. 354–74. JSTOR, <https://doi.org/10.1525/jsah.2011.70.3.354>. Accessed 12 Sep. 2022.

Appleby, Paul. *Sustainable Retrofit and Facilities Management*. Routledge, 2013.

Boschmann, E Eric, and Jessica N Gabriel. "Urban Sustainability and the LEED Rating System: Case Studies on the Role of Regional Characteristics and Adaptive Reuse in Green Building in Denver and Boulder, Colorado." *The Geographical Journal*, vol. 179, no. 3, 2013, pp. 221–233., <https://doi.org/10.1111/j.1475-4959.2012.00493.x>.

Bullen, Peter A. "Adaptive Reuse and Sustainability of Commercial Buildings." *Facilities* (Bradford, West Yorkshire, England), vol. 25, no. 1/2, 2007

Della Torre, Stefano, et al. "Regeneration of the Built Environment from a Circular Economy Perspective." *OAPEN Home*, Springer Nature, 1 Apr. 2020, <https://library.oapen.org/handle/20.500.12657/23059>.

DOUGLIS, SYLVIE. "How an Empty Office Becomes a Home." NPR, NPR, 23 Mar. 2022, www.npr.org/transcripts/1088272830.

Farivar, Cyrus. "Why Empty Offices Aren't Being Turned into Housing, despite Lengthy Vacancies." *NBCNews.com*, NBCUniversal News Group, 25 July 2021, www.nbcnews.com/business/real-estate/why-empty-offices-aren-t-being-turned-housing-despite-lengthy-n1274810.

Glumac, Brano, and Nizamul Islam. "Housing Preferences for Adaptive Re-use of Office and Industrial Buildings: Demand Side." *Sustainable Cities and Society*, vol. 62, 2020, pp. 102379.

Hughes, C. J. "What Will Happen to All the Empty Office Buildings and Hotels?" *The New York Times*, *The New York Times*, 16 Apr. 2021, www.nytimes.com/2021/04/16/realestate/empty-office-buildings-hotels.html.

Kirk, Patricia. "Obsolete Office Buildings Offer Investors a Myriad of Opportunities for Adaptive Re-use." *National Real Estate Investor*, 2019.

Kjaer Zimmermann, Regitze, et al. "Categorizing Building Certification Systems According to the Definition of Sustainable Building." *NASA/ADS*, Feb. 2019, <https://ui.adsabs.harvard.edu/abs/2019MS%26E..471i2060K/abstract>.

Kubey, Karen. *Housing as Intervention: Architecture Towards Social Equity*. vol. Number 254.;88., John Wiley & Sons Ltd, Chichester, UK, 2018.

Lewis, Roger K. "Following Pandemic, Converting Office Buildings into Housing May Become New 'Normal'." *The Washington Post*, WP Company, 3 Apr. 2021, www.washingtonpost.com/realestate/following-pandemic-converting-office-buildings-into-housing-may-become-new-normal/2021/03/31/2fec400e-8820-11eb-8a8b-5cf82c3dffe4_story.html.

Liu, Jennifer. "A Record Number of Old Office Buildings Were Turned into Apartments This Year." *CNBC*, *CNBC*, 24 Nov. 2021, www.cnbc.com/2021/11/24/a-record-number-of-office-buildings-turned-into-apartments-this-year.html.

Lloyd-Jones, T. "Retrofitting Sustainability to Historic City Core Areas." *Proceedings of the Institution of Civil Engineers - Municipal Engineer*, vol. 163, no. 3, 2010, <https://doi.org/10.1680/muen.2010.163.3.179>.

Bibliography

Merlino, Kathryn R., and JSTOR (Organization). *Building Reuse: Sustainability, Preservation, and the Value of Design*. University of Washington Press, Seattle, WA, 2018.

Milstein, Jolie and Moquin, Scott. "Rochester Has Made Massive Progress on Affordable Housing. There's More to Do: Opinion." *Democrat and Chronicle*, Rochester Democrat and Chronicle, 10 Oct. 2022, www.democratandchronicle.com/story/opinion/2022/10/10/rochester-ny-affordable-housing-more-to-do/69552507007/.

"Obsolete Office Buildings Offer Investors a Myriad of Opportunities for Adaptive Re-Use - Sachse Construction." *Sachse Construction* -, 28 June 2019, <https://sachseconstruction.com/obsolete-office-buildings-offer-investors-a-myrriad-of-opportunities-for-adaptive-re-use/>.

Remoy, Hilde, and Theo van der Voordt. "Adaptive Reuse of Office Buildings into Housing: Opportunities and Risks." *Building Research and Information : The International Journal of Research, Development and Demonstration*, vol. 42, no. 3, 2014, pp. 381-390.

Towler, Mary Anna. "The Roots of Our Poverty." *CITY News*, CITY News, 21 July 2022, www.rochestercitynewspaper.com/rochester/the-roots-of-our-poverty/Content?oid=2497773.

Troi, Alexandra & Bastian, Zeno (Passive House Institute). *Energy Efficiency Solutions for Historic Buildings: A Handbook*. Birkhäuser, Basel, 2015;2014;.

United States Census, "Report on Poverty", 2020.

United States Department of Energy, "Quadrennial Technology Review An Assessment of Energy Technologies and Research Opportunities." 2015

Valenti, Andrew. "Former First Federal Office Building to Reopen as Affordable Housing." *New Orleans CityBusiness*, 2022.

Vigdor, Jacob L. "Is Urban Decay Bad? Is Urban Revitalization Bad Too?" *Journal of Urban Economics*, vol. 68, no. 3, 2010, <https://doi.org/10.1016/j.jue.2010.05.003>.

Williamson, Andrew, and Stephen Finnegan. "Sustainability in Heritage Buildings: Can We Improve the Sustainable Development of Existing Buildings under Approved Document L?" *MDPI*, Multidisciplinary Digital Publishing Institute, 24 Mar. 2021, <https://www.mdpi.com/2071-1050/13/7/3620/htm>.

Young, Robert A., and Carl Elefante. *Stewardship of the Built Environment: Sustainability, Preservation, and Reuse*. Island Press, 2015.

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Thank You for Your Time!