ENPRO 357

Green Building Design Concept and Integration

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1. Executive Summary

Mixed-use buildings have been proven to be a viable solution to meeting environmental, economical, and societal needs. Through extensive research, Team Alpha has found this to be especially true for the Village of Oak Park and has developed a detailed plan for introducing more mixed-use buildings into the neighborhood. This plan centers on a comprehensive design for a mixed-use building designed to meet the needs of our client, Peter Nowicki.

1.1 Business Opportunity

Our purpose is to seek the best solution to designing a sustainable mixed-use building for our client in Oak Park. A model of which can also be applied to other sites in the area. The design will focus on an ethical solution that minimizes energy consumption and environmental impact by incorporating available sustainable technologies, sustainable design strategies, and analysis of economic viability. This semester, the ENPRO team will present our analysis results and our eventual design to both the Village of Oak Park and to our client. If our design proves to be favorable to all the parties involved we will aid our client in proceeding to implement and build the design. The design model will then serve as catalyst for change in design and implementation of mixed-use buildings.

1.2 Building Design

The building designed by Team Alpha is a 4 - story building with retail and parking on the first floor, a commercial space for Mr. Nowicki's business as well as a leasable commercial space on the second floor, two leasable apartments on the third floor, and a living space for the Nowicki family with a skylight and access to a green roof. Dukane Precast Inc. double-wall panels were chosen as the best material for the building due to it's exceptional strength, sustainability, eco-friendliness, and efficient construction method.

Our group plans to use innovative technologies and strategies in our design. We will use high performance materials, equipment, and systems to achieve a high performance design. As a group we are investigating, UPS power, passive and active solar design including photovoltaics, passive and active heating, cooling, condition and ventilating systems and efficient structural systems.

1.3 Current Business Position

The final building design won the approval of Mr. Nowicki. Succeeding steps will be determined according to Mr. Nowicki's discretion.

2. Project Background

Peter Nowicki sponsors ENPRO 357 Green Building Design Concept and Integration. Mr. Nowicki currently owns a vacant property on Madison Street in Oak Park. He is considering constructing a mixed-use building to house his company and family. He is currently leasing space for his company and owns a home in nearby Oak Park. Peter Nowicki is married with 5 children and owns a trading company. The Nowickis have been considering building a mixed use building on this property for several years.

2.1 Project Description

The Nowickis have tried building on this property before. Our goal is to help the Nowickis decide if it will be economical to build and what will be the most beneficial and profitable design. The mixed-use nature of the project creates unique challenges of integrating residential design with commercial. Additionally we must seek to resolve any issues the village of Oak Park may have with the Nowickis developing their property. Oak Park is in the process of executing a business plan for the Madison Street Corridor. We must find a common ground between Oak Park's goals and the Nowickis.

2.2 Team Organization

In order to reach our primary objective and keep our sponsor's requirements in mind, ENPRO 357 members would research economically viable sustainable methods for fulfilling the energy needs of a mixed use building in Oak Park; Develop a financial plan that summarizes cost analysis and building performance; Design and test our solution by comparing its energy consumption/costs with the average home of today.

We initiated our process by first meeting with Peter Nowicki to clearly establish the project goals, deliverables, and expected results. Figure 1 below depicts the subgroup formations within each of our two phases of Pre-Design and Design for ENPRO 357.

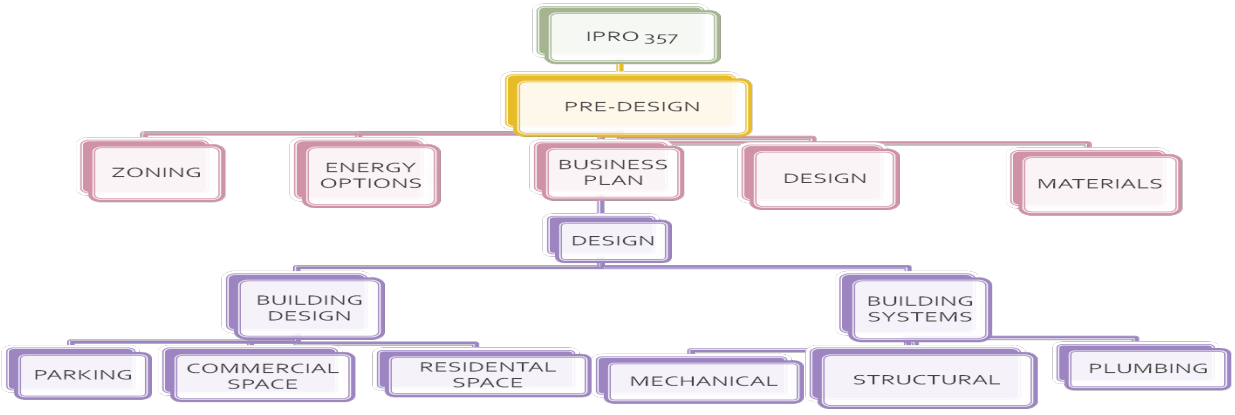


Figure 1

Necessary research was then parceled out among the Pre-Design sub-groups, while adhering to strengths and weaknesses of each team member as much as possible. Each sub-group was responsible for overseeing and advising in the implementation of their findings by the Design sub-group. A master list was composed including all baseline data regarding the average household and business that was to be improved. All technologies, methods, and materials were included in this master list as well as their benefits, costs, etc. These technologies, methods, and materials were chosen for their merits and the influence on the 'baseline' statistics will be catalogued for comparison purposes. Each Design sub-group then implemented the research done into a mixed-use building design for the Madison Street lot.

The team had two team leaders who are responsible for coordinating the efforts of the sub-groups. They were chosen by nominations and voting as Aneta Ustupska and Andrew Bossemeyer

2.3 Team Methodology

a. A site visit will be done to confirm the baseline data pool and to obtain new observations and possible questions.
b. Using the confirmed baseline data pool we will research technologies and methods to reduce the consumption of resources without infringing on the needs of future inhabitants. (i.e. How much energy can be saved on heating bills/natural gas consumed by using a better insulation?).
c. The owner will be consulted for any missing information or opinions.
d. After gathering information on effective technologies and methods we will determine which technologies are most effective and affordable by analyzing things such as the cost of the product, its life-span, the expected payback period (money saved over time), etc. This information will be catalogued and the best materials, methods, and technologies will be selected.
e. These chosen materials, methods, and technologies will be recommended to the corresponding Planning sub-group for implementation.
f. Each research related sub-group will act as an expert 'consultant' to the corresponding Planning sub-group aiding in the implementation of specific information. This will be an ongoing and ever evolving process requiring constant critique, research, re-analyzing, and re-designing.
g. Potential solutions should be analyzed and tested for viability in regards to the stakeholder, budget, environmental impact, marketability, and legality (or conformation to codes and regulations).
h. A minute-keeper will document all items of discussion throughout the project so we can look back and study the exact path of logic

3. The Building

The central idea of our project was to design a building that would meet all of Peter Nowicki's needs and still be replicable for other cliental.

3.1 Building Overview

Our team was able to design a building, which addressed all of our clients needs while also working as a platform for other futures developments. We designed a mixed-use four-story building that consists of a first level retail and parking, two commercial units on the second floor, two rentable apartments on the third floor, and the owners own residence on the top floor.

3.2 Competitive Analysis

Our design was within a reasonable budget and much more energy efficient than conventional buildings as a result of using both active and passive green technologies. Our design also fits in well with the needs of the surrounding demographic, and will help with the Madison Street Corridor Revitalization projects goal of creating a more pedestrian friendly zone.

3.3 Green Technology

The green technologies that we used in this building were chosen by us because we felt that they made sense for this building both in terms of efficiency and economics. Since were are not worried about LEED accreditation we are able to choose systems that integrated well with this building instead of just using systems in the attempt to accumulate points.

For our HVAC system we chose to use a vertical closed loop ground-source heat pump system coupled with radiant flooring and passive chilled beams. This system will use 25-50% less energy than conventional systems and last longer. For heating we will use a hydronic radiant floor system which will further reduce the amount of energy used for heating by 15% and create a more even heat in the living space, and for cooling we will use passive chilled beams which are quieter and require lower maintenance than forced air systems.

Our hot water will be provided primarily by a solar array with conventional backup for colder winter days. This system should reduce our energy used for water heating by about 60%.

For electrical generation on site we found that there were no options that made economic or environmental sense. Economically the pay off time was longer than the life expectancy of the units for wind turbines and photovoltaic cells, and other technologies, such as natural gas powered co-generation, while being able to create electricity on site, reduced the overall efficiency of the building. We will be installing conduits to the roof so when the price of photovoltaic cells or wind turbines reduce in price to be economically feasible they can be installed easily.

3.4 Materials and Construction

The materials sub-group researched materials extensively from early-February till late-March to find the material that would best fit the building design. The materials sub-group considered several important properties including cost, advantages and disadvantages, performance, and structural integrity. By mid-term, the sub-group determined that insulated concrete forms and precast concrete were the top two choices. The sub-group found companies that produced these materials and visited each of them. It was then determined that Dukane Precast Inc. would provide the best quality for the cost. Complete structural plans for the design were thus developed using Dukane precast concrete.

4. The Industry, Competition and Market

4.1 Definition of Mixed-Use

Mixed-use developments combine both living and working spaces into one building with the intention to meld these two parts of life into one. Areas with a high concentration of mixed-use buildings tend to be more pedestrian friendly and promote the use of local businesses within walking distance. In doing this it brings a certain amount of convenience to both the employees that work in the building and the residents of the building.

4.2 Primary Competitors

Our primary competitors are other existing office space and homes in the area and also other new construction mixed use buildings in the area. With there being an emphasis on creating a more pedestrian friendly area and revitalizing business along Madison St., this development falls in with the future development plans of the Village of Oak Park. We felt that our design is superior to other new construction because of our use of innovative construction materials and building systems that reduce the overall energy consumption of our building.

4.3 Market Size

In our research we found that 90% of businesses in Oak Park have less than 20 employees, which indicates to us that there is a large market for the size of office space that is provided in our plan. Also in this area over 71% of housing in this area is multi-family and 54% of all housing in the area is rental. This indicates that there will be ample market for the housing options in this building.

4.5 Market Growth

The city of Oak Park has been working on a Madison Street revitalization project that is promoting the area around Madison St. as an alternative, where new development is possible, to other commercial streets in the area such as Lake St. which is already saturated with buildings. We feel that this indicates that there is great potential for growth in this area. Businesses and People are moving back to the inner suburbs and city because the higher population density of these areas gives them the ability to be less car-dependent and also creates a greater sense of community than the sprawl of the outer suburbs.

4.6 Customer Profile

For this ENPRO we had a specific customer that already both lived and worked in Oak Park. He was interested in being able to combine his company's offices and his place of residence into one building on a piece of property he already owned on Madison St. In addition to this for this ENPRO we also looked into the feasibility of using this plan as a model for other mixed-use developments within the Madison St. corridor. We hope to approach other developers with these designs

5. Marketing Plan

Project 357's overall marketing strategy will be to educate consumers about the benefits of integrating mixed-use live-work buildings with sustainable technology, and to promote the availability to live, work, and play in Project 357. Customers will be reached through fliers, newspaper advertisements, publicity efforts, industry networking, and special event promotions. Project 357 will target a broad range of people who need residential, commercial, or retail space, and are open to the investment of leasable space and a progressive design.

5.1 Competitive Advantage

Although the market for mixed-use buildings is growing, especially in urban environments, Project 357 is still fairly innovative because of its replicable design, interchangeable components, investment incentives, and unique mix of green technologies and construction materials. The feasibility for a large market investment that could cater to the individual needs of every potential customer would attract many investors, as every customer is satisfied with a minimal amount of preliminary design work.

5.2 Pricing

After conducting in depth research on average construction costs for a variety of mixed-use buildings, the average cost was estimated at $120 per square foot.

Project 357's replicable mixed-use design could be built with an average cost of $102 per square foot with an added green roof and unique residential design.

5.3 Distribution Channels

Primary distribution of the design will be done through industry networking with contractors, real estate companies, and architecture firms. Once the design gains momentum, its distribution will be based on local demand with local companies.

5.4 Promotional Plan

Project 357 will promote its replicable mixed use building designs to customers via the following:

Newspaper Advertisements:
Advertisements will be placed regularly in newspapers focusing on the interchangeable and leasable space within the building design and the promising investment opportunities. There will also be advertisements for open house showings and events.

Public Relations:
A publicity campaign that will attempt to gain company owners' appearances as experts on sustainable urbanism and financial investments on local news channels, TV specials, radio broadcasts, and as expert sources for print publications.

Invitations:
Distributing educational and promotional fliers to real estate businesses, contractors, and local businesses.

Industry Networking House:
There will be multiple open house event showings, where perspective clients are personally invited to tour an example building, hear a presentation, enjoy refreshments, and ask questions.

5.5 Feedback

When possible, Project 357 management will conduct informal interviews with its customers. Questions regarding the building's costs, comfort, and overall satisfaction with Project 357 experience will be asked. For corporate events, formal mail surveys will be sent to company coordinators, in order to receive feedback on how the Project 357 design was received. In addition, analysis of the effects of any marketing or promotional campaigns on immediate revenues will be performed on a case-by-case basis.

6. Financial Assumptions

This section of the business plan summarizes the financial assumptions used in creating the projected financial statements for the owner.

6.1 Beginning Balance Sheet

	Total:	Per sf	% of Costs
Project Costs	$ 3,240,007	$ 178	100%
Total Hard Costs	$ 1,855,620	$ 102	57%
Total Land Costs	$ 500,000	$ 27	15%
Total Soft Costs	$ 884,387	$ 48	27%

Hard costs are actual construction costs (e.g. plumbing, framing, trim), soft costs are everything else (sales tax, overhead, profit, supervision etc), and land costs is the cost of the empty lot. The use of Dukane precast concrete expedited the construction process since it uses pre-fabricated panels and thus saved money.

6.2 Profit and Loss

Effective Gross Income:					
	Year 1	Year 2	Year 3	Year 4	Year 5
Combined Rent Income:	$ 310,901	$ 326,446	$ 342,768	$ 359,907	$ 377,902
Parking Income:	$ 10,800	$ 11,340	$ 11,907	$ 12,502	$ 13,127
Other Income:	$ 600	$ 630	$ 662	$ 695	$ 729
Concessions:	$ -	$ -	$ -	$ -	$ -
Vacancy and Credit Loss:	$ (12,892)	$ (13,537)	$ (14,213)	$ (14,924)	$ (15,670)
Effective Rental Income:	$ 309,409	$ 324,879	$ 341,123	$ 358,179	$ 376,088

This table shows the viable incomes that the owner should be receiving due to the leasable spaces.

Investment Analysis	
Initial Investment Amount	$ 1,134,002
Total Return Amount	$ 3,110,654
Total Holding Period	6.0
Cash-on-Cash return	29%
IRR	**18.3%**

This table summarizes the amount of money that the owner needs to invest and the rate of return for his investment. The owner's goal was a return of the investment in 16 years. This development gives him a return in his investment in 10 years.

6.3 Balance Sheet

Direct Capitalization Summary:					
	Year 1	Year 2	Year 3	Year 4	Year 5
Effective Rental Income:	$ 309,409	$ 324,879	$ 341,123	$ 358,179	$ 376,088
Operating Expenses:	$ (111,387)	$ (116,957)	$ (122,804)	$ (128,945)	$ (135,392)
Net Income (NOI):	$ 198,022	$ 207,923	$ 218,319	$ 229,235	$ 240,697
Debt Service	(126,360.26)	(126,360.26)	(126,360.26)	(126,360.26)	(126,360.26)
Cashflow above Debt Service	71,661.35	81,562.44	91,958.57	102,874.51	114,336.25
Divided by cap rate:	9.5%	9.0%	8.6%	8.1%	7.7%
Indicated Value as stabilized:	$ 2,084,438	$ 2,303,853	$ 2,546,363	$ 2,814,402	$ 3,110,654

6.4 Cash Plan

Sources and Uses		
Sources		
Construction Loan (65% LTC)	$ 2,106,004	
Equity (35% LTC)	$ 1,134,002	
Projected Sales Revenue	$ 3,110,654	
Cashflow above debt service	$ 462,393	
Uses		
Project Costs		$ (3,240,007)
Repayment of Construction Loan		$ (2,106,004)
Repayment of Equity		$ (1,134,002)
Developer Profit (Client Savings)		$ (333,041)
	$ 6,813,054	$ (6,813,054)

7. Conclusions and Recommendations

We feel that we have produced a design that has met the needs of our client but can also be adapted to the needs of other clients easily.

7.1 Business Goals / Future Plans

Team Alpha was very pleased with the outcome of the project. Peter Nowicki was also impressed by the design and chose it over another design that was being created for him. Peter Nowicki is going to take this project further and keep in contact with Team Alpha as needed till completion.

7.2 Keys to Success

Success of this project is attributed to the exceptional work ethic and communication of this team. The team leaders conducted the team meetings democratically allowing tasks to be determined as a team. The tasks turned out to be very reasonable fitting the strengths of each team member. The team also put the owner's needs and wants first.

List of Team Members

1. Andrew Bossemeyer
2. Ryan Bouck
3. Jorge Chavez
4. Guadalupe Cortes
5. Brett McQuillan
6. Robert Mcluckie
7. Beth Nielsen
8. Alex Ong
9. Timothy Ranttila
10. Aneta Ustupska
11. Michael Warnes

IPRO Team Expenses

Architectural model of the building - $64.24
Gas for trip to Dukane Precast Inc. - $40.00

Total cost - $104.24

IPRO - Project Budget & Proforma

22-Apr-10

Zoning and Area Analysis

Address:	838 Madison Street
Zoning District	C/Madison Street Overlay
Permitted Use	Mixed Use:
Lot Size (sf)	6,750
Acres	0.15
Allowable FAR	na
Allowable FAR (sf)	na
Actual FAR (sf)	na
Front Setback (ft)	3
Rear Setback (ft)	25
Side Setbacks (ft)	10
Open Space Requirements	25%
Allowable Footprint (sf)	5,400
Actual Footprint (sf)	4,560
Building Height Max Allowable (ft)	50
Actual Height (ft)	50
Stories	4
Parking Spaces (req.)	11
Parking Spaces (on site)	8
Constrcuction Duration (mos)	24

Space Breakdown

1st Floor	
Retail	880
Parking	2,975
2nd Floor	
Commercial 1	1,715
Commercial 2	1,700
3rd Floor	
Condo 1	1,771
Condo2	1,933

4th Floor	
Client Residence	4,048

TOTAL NSF	15,022
TOTAL GSF	18,240
Efficiency	18%

Total By Type

Client's Space (sf)	5,763
Condo Saleable (sf)	3,704
Commercial Saleable (sf)	1,700
Retail Saleable (sf)	880
Parking (sf)	2,975
Total	15,022

Project Budget			
Hard Construction Costs	Total:	Per sf	% of Costs
Div 1- General Conditions	$ 90,000	$ 4.93	4.9%
Div 2 - Sitework			
Water + Sewer	$ 35,000	$ 1.92	1.9%
Excavation	$ 18,240	$ 1.00	1.0%
Caissons	$ -	$ -	0.0%
Sheeting	$ -	$ -	0.0%
Paving	$ 11,900	$ 0.65	0.6%
Landscaping	$ 20,000	$ 1.10	1.1%
Div 3 - Concrete			
Structural Concrete Foundations	$ 127,680	$ 7.00	6.9%
Precast Concrete Panels	$ 232,800	$ 12.76	12.5%
Concrete Topping	$ -	$ -	0.0%
Div 4 - Masonry			
CMU Bearing Walls		$ -	0.0%
Masonry Veneer		$ -	0.0%
Div 5 - Steel			

Structural Steel			$ -	0.0%
Misc Ornamental Iron	$	35,000	$ 1.92	1.9%
Light Guage Metal Framing			$ -	0.0%
Div 6 - Wood and Carpentry				
Misc Carpentry	$	80,000	$ 4.39	4.3%
Cabinetry	$	30,000	$ 1.64	1.6%
Millwork	$	12,000	$ 0.66	0.6%
Div 7 - Roofing and Moisture Control				
Roofing	$	60,000	$ 3.29	3.2%
Caulking	$	10,000	$ 0.55	0.5%
Waterproofing	$	-	$ -	0.0%
Div 8 - Doors and Windows				
Window System	$	180,000	$ 9.87	9.7%
Doors and Frames	$	10,000	$ 0.55	0.5%
Store Front	$	15,000	$ 0.82	0.8%
Finish Hardware	$	6,000	$ 0.33	0.3%
Div 9 - Finishes				
Drywall	$	120,000	$ 6.58	6.5%
Tile	$	80,000	$ 4.39	4.3%
Painting	$	60,000	$ 3.29	3.2%
Carpeting	$	24,000	$ 1.32	1.3%
Div 10 - Accessories				
Bath Accessories	$	10,000	$ 0.55	0.5%
Div 11 - Appliances	$	30,000	$ 1.64	1.6%
Div 12 - Furniture	$	-		
Div 13 - Pool		na		
Div 14 - Elevator	$	200,000	$ 10.96	10.8%
Div 15 - Mechanical Systems				
HVAC	$	96,000	$ 5.26	5.2%
Fire Protection	$	54,000	$ 2.96	2.9%
Plumbing	$	96,000	$ 5.26	5.2%
Div 16 - Electrical				
Electrical	$	96,000	$ 2,461.54	5.2%
Security	$	10,000	$ 0.55	0.5%
Telephony	$	6,000	$ 0.33	0.3%

Total Hard Costs	**$**	**1,855,620**	$ 101.73	100.0%

Land Costs				
Div 18 - Land	$	500,000	$ 168.07	
Site Clearing and Demolition	$	-	$ -	
Total Land Costs	**$**	**500,000**	$ 27.41	

Soft Costs		Total:	Per sf	% of Costs
Div 19 - Architect and Engineer				
Architect	$	92,781	$ 31.19	10.5%
Structural Engineer	$	46,391	$ 15.59	5.2%
MEP Engineer	$	24,000	$ 8.07	2.7%
Civil Engineer	$	8,000	$ 2.69	0.9%
Consultants	$	15,000	$ 5.04	1.7%
Div 20 - Legal and Accounting	$	55,000	$ 18.49	6.2%
Div 21 - Financing	$	30,000	$ 10.08	3.4%
Div 22 - Title Insurance	$	15,000	$ 5.04	1.7%
Div 23 - Insurance	$	40,000	$ 13.45	4.5%
General Liability			$ -	0.0%
Worker's Comp			$ -	0.0%
Builder's Risk			$ -	0.0%
Div 24 - Municipal Fees	$	92,000	$ 30.92	10.4%
Permits			$ -	0.0%
Zoning Fees			$ -	0.0%
RE Taxes			$ -	0.0%
Div 26 - Surveys and Testing	$	17,000	$ 5.71	1.9%
Plat of Survey			$ -	0.0%
Concrete Testing			$ -	0.0%
Footing Testing			$ -	0.0%
Environmental Testing			$ -	0.0%
Construction Layout			$ -	0.0%
Div 27 - Utilities	$	15,000	$ 5.04	1.7%
Div 28a - Developer Fee (6% of hardcosts)	$	111,337	$ 37.42	12.6%

Div 28b - Developer Overhead (9%)	$ 100,203	$ 33.68	11.3%
Div 31 - Construction Interest	$ 83,503	$ 28.07	9.4%
Div 32a - Hard Cost Contingency (5%)	$ 92,781	$ 31.19	10.5%
Div 32b - Soft Cost Contingency (2.5%)	$ 46,391	$ 15.59	5.2%
Total Soft Costs	**$ 884,387**	$ 48.49	100.0%

	Total:	Per sf	% of Costs
Project Costs	*$ 3,240,007*	*$ 178*	*100%*
Total Hard Costs	*$ 1,855,620*	*$ 102*	*57%*
Total Land Costs	*$ 500,000*	*$ 27*	*15%*
Total Soft Costs	*$ 884,387*	*$ 48*	*27%*

Cash Flow Proforma

838 Madison Street, Oak Park, IL

Unit Summary:

Building	**Units:**	**Res SF:**
Retail	1	880
Commercial	2	3,415
Residential	3	7,752

Rental Apartment Assumptions:

1) Land Value is based on recent comparables

2) Market Rent per SF at stabilization:

Retail	Year 1	Year 2	Year 3	Year 4	Year 5

Rent/SF:	$ 2.30	$ 2.42	$ 2.54	$ 2.66	$ 2.80
Total Annual Rent:	$ 24,288	$ 25,502	$ 26,778	$ 28,116	$ 29,522

Commercial	Year 1	Year 2	Year 3	Year 4	Year 5
Rent/SF:	$ 2.00	$ 2.10	$ 2.21	$ 2.32	$ 2.43
Total Annual Rent:	$ 81,960	$ 86,058	$ 90,361	$ 94,879	$ 99,623

Residential	Year 1	Year 2	Year 3	Year 4	Year 5
Rent/SF:	$ 2.20	$ 2.31	$ 2.43	$ 2.55	$ 2.67
Total Annual Rent:	$ 204,653	$ 214,885	$ 225,630	$ 236,911	$ 248,757

TOTAL	**$ 310,901**	**$ 326,446**	**$ 342,768**	**$ 359,907**	**$ 377,902**

3) No rent concessions were figured.*

4) Parking revenue: *

Monthly Parking/space:	$ 60	$ 63	$ 66	$ 69	$ 73
Total annual parking:	$ 4,320	$ 4,536	$ 4,763	$ 5,001	$ 5,251

5) Other revenue: *

Other revenue/unit:	$ 200	$ 210	$ 221	$ 232	$ 243
Other annual revenue:	$ 600	$ 630	$ 662	$ 695	$ 729

6) Stabilized market occupancy was figured at 96% *

7) Operating expenses will be estimated at 36% including RE taxes and 23% without. *

8) Absorption is estimated to occur 6 months

9) annual increases equal 5%

* based on information from Appraisal Research Counselors Report dated 10 Feb 2010

Effective Gross Income:

	Year 1	Year 2	Year 3	Year 4	Year 5
Combined Rent Income:	$ 310,901	$ 326,446	$ 342,768	$ 359,907	$ 377,902
Parking Income:	$ 4,320	$ 4,536	$ 4,763	$ 5,001	$ 5,251
Other Income:	$ 600	$ 630	$ 662	$ 695	$ 729
Concessions:	$ -	$ -	$ -	$ -	$ -
Vacancy and Credit Loss:	$ (12,633)	$ (13,264)	$ (13,928)	$ (14,624)	$ (15,355)
Effective Rental Income:	$ 303,188	$ 318,347	$ 334,265	$ 350,978	$ 368,527

Operating Expenses:

Expenses will be based on 36% of projected stabilized effective income

Operating Expenses incl RE taxes (36%):	$ 109,148	$ 114,605	$ 120,335	$ 126,352	$ 132,670

Absorption:

Stabilization of the property is estimated to occur 18 months

Capitalization:

Direct Capitalization Summary:

	Year 1	Year 2	Year 3	Year 4	Year 5
Effective Rental Income:	$ 303,188	$ 318,347	$ 334,265	$ 350,978	$ 368,527
Operating Expenses:	$ (109,148)	$ (114,605)	$ (120,335)	$ (126,352)	$ (132,670)
Net Income (NOI):	$ 194,040	$ 203,742	$ 213,929	$ 224,626	$ 235,857

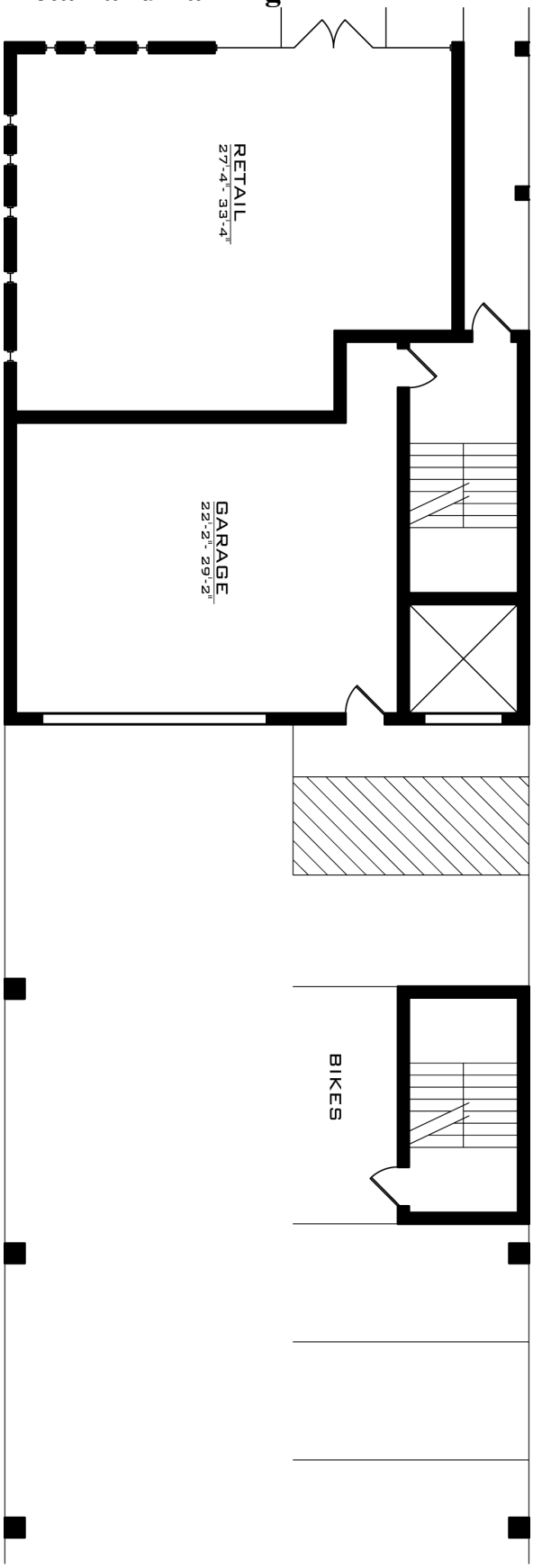
Debt Service	(126,360.26)	(126,360.26)	(126,360.26)	(126,360.26)	(126,360.26)
Cashflow above Debt Service	67,680.04	77,382.06	87,569.17	98,265.65	109,496.94
Divided by cap rate:	*9.5%*	*9.0%*	*8.6%*	*8.1%*	*7.7%*
Indicated Value as stabilized:	*$ 2,042,529*	*$ 2,257,533*	*$ 2,495,168*	*$ 2,757,817*	*$ 3,048,113*

Sources and Uses

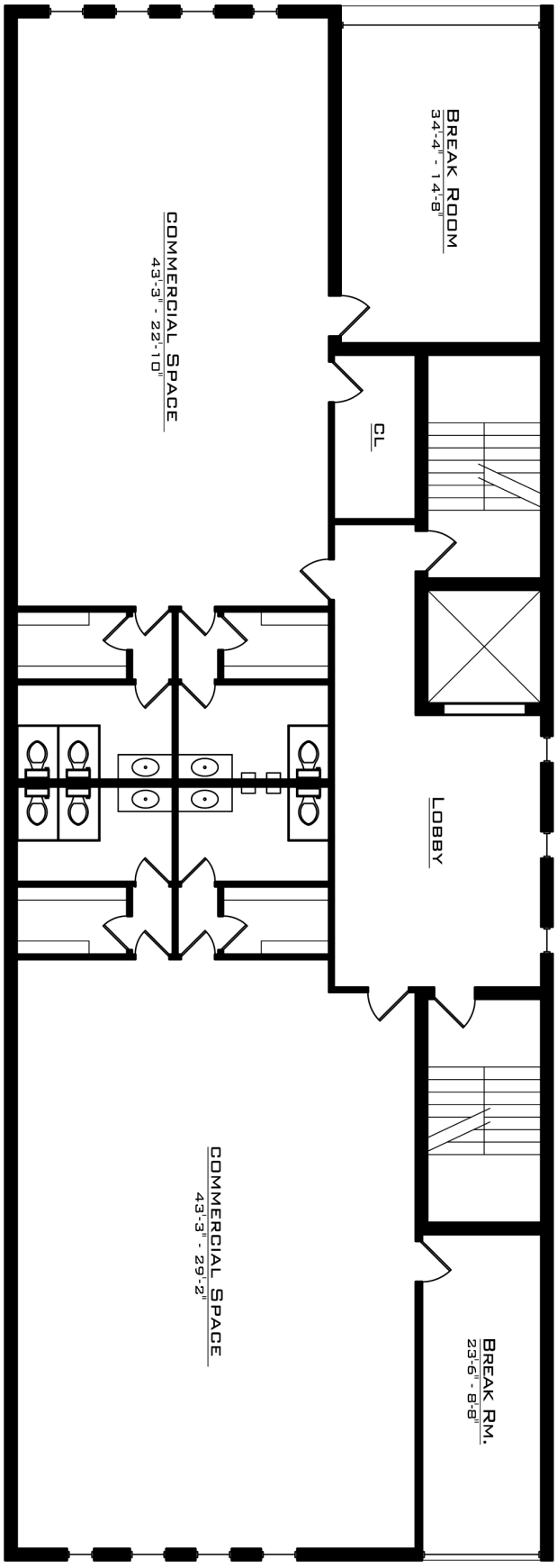
Sources		
Construction Loan (65% LTC)	$ 2,106,004	
Equity (35% LTC)	$ 1,134,002	
Projected Sales Revenue	$ 3,048,113	
Cashflow above debt service	$ 440,394	
Uses		
Project Costs		$ (3,240,007)
Repayment of Construction Loan		$ (2,106,004)
Repayment of Equity		$ (1,134,002)
Developer Profit (Client Savings)		$ (248,501)
	$ 6,728,514	$ (6,728,514)

Investment Analysis	
Initial Investment Amount	$ 1,134,002
Total Return Amount	$ 3,048,113
Total Holding Period	6.0
Cash-on-Cash return	22%
IRR	**17.9%**

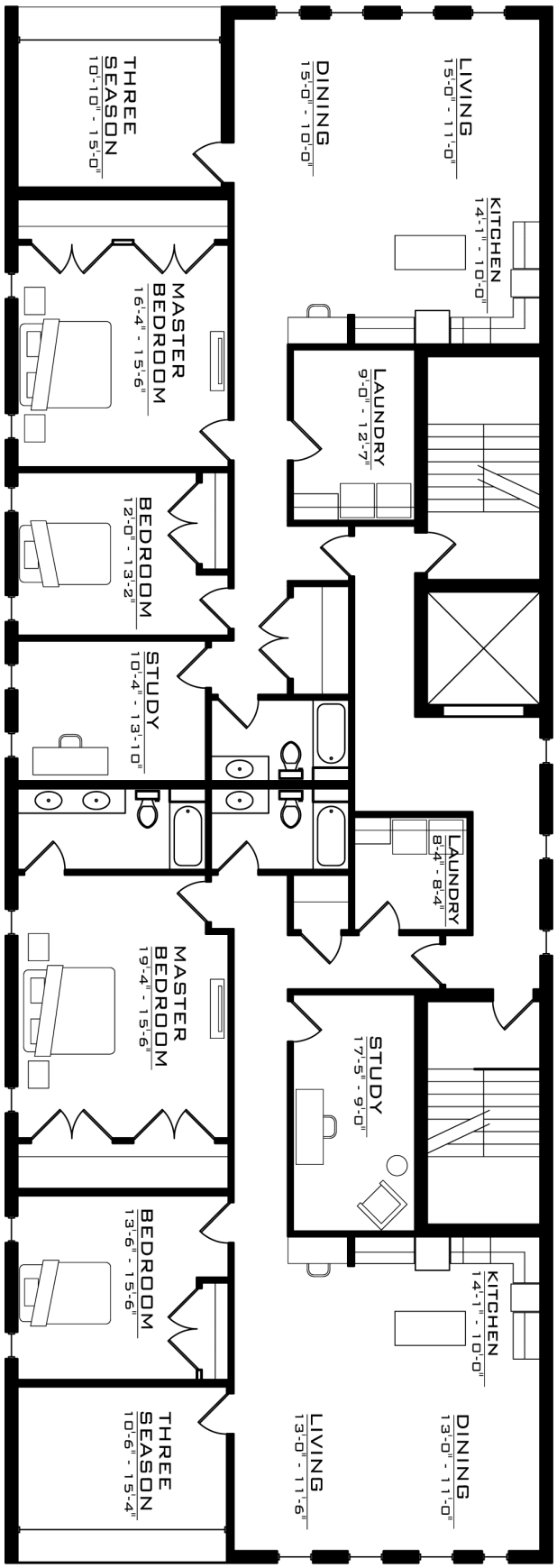
First Floor Plan – Retail and Parking



Second Floor Plan – Owner's Commercial Space and Leasable Commercial Space

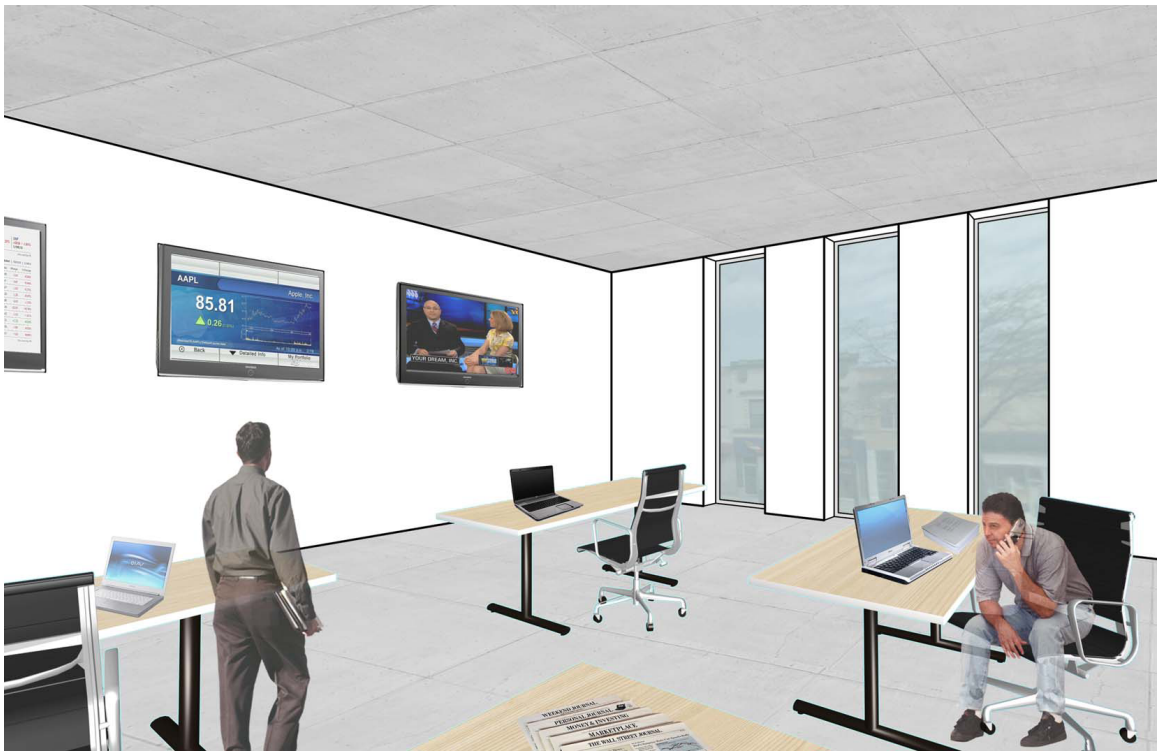


Third Floor Plan – Two Leasable 2-Bedroom Apartments



Fourth Floor – Owner's Residential Space

Rendered Drawing of Commercial Space

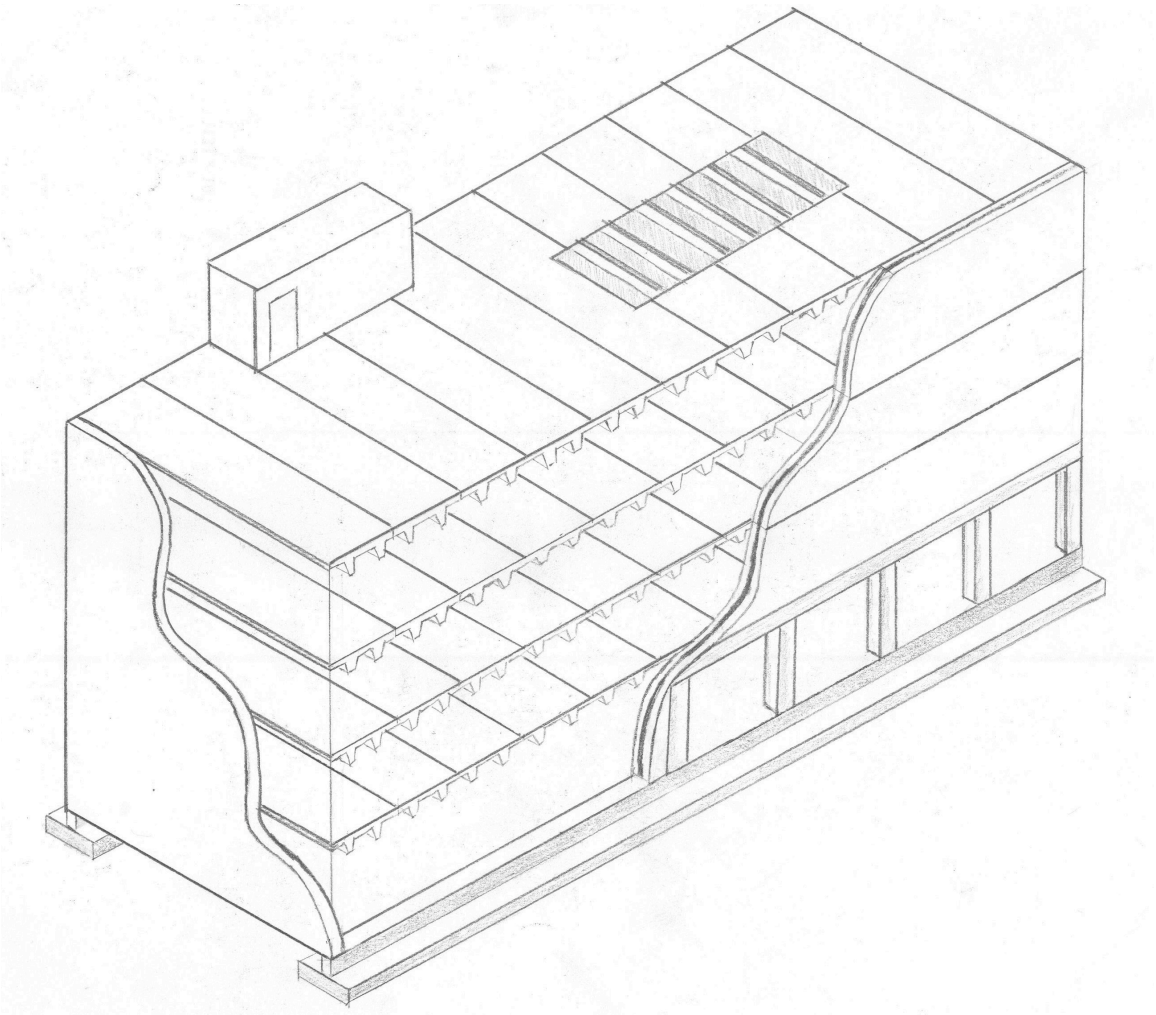


Rendered Drawing of Residential Living Room and Balcony

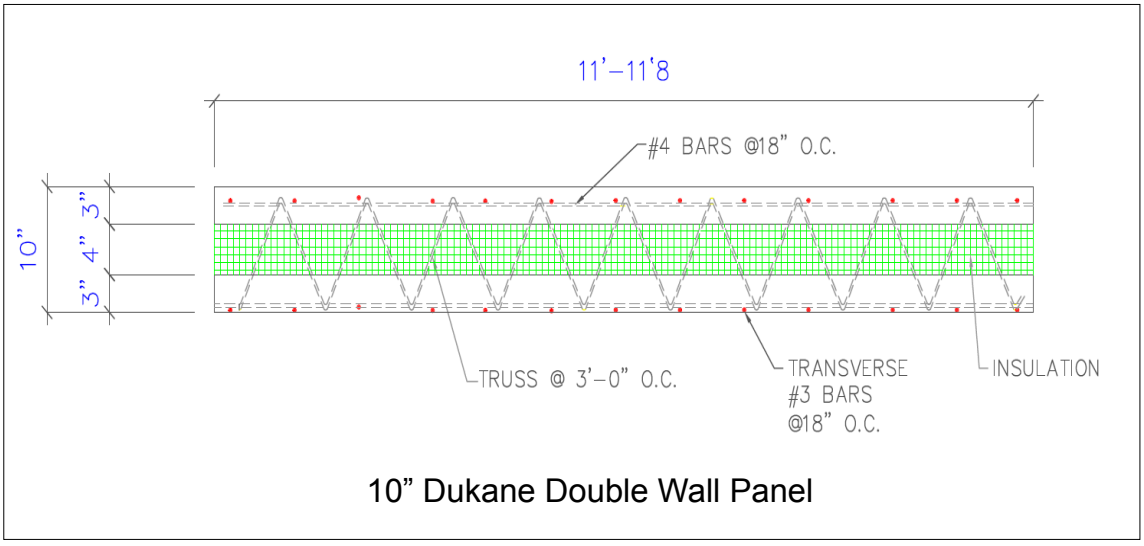
Rendered Drawing of Atrium Space

Rendered Drawing of Green Roof

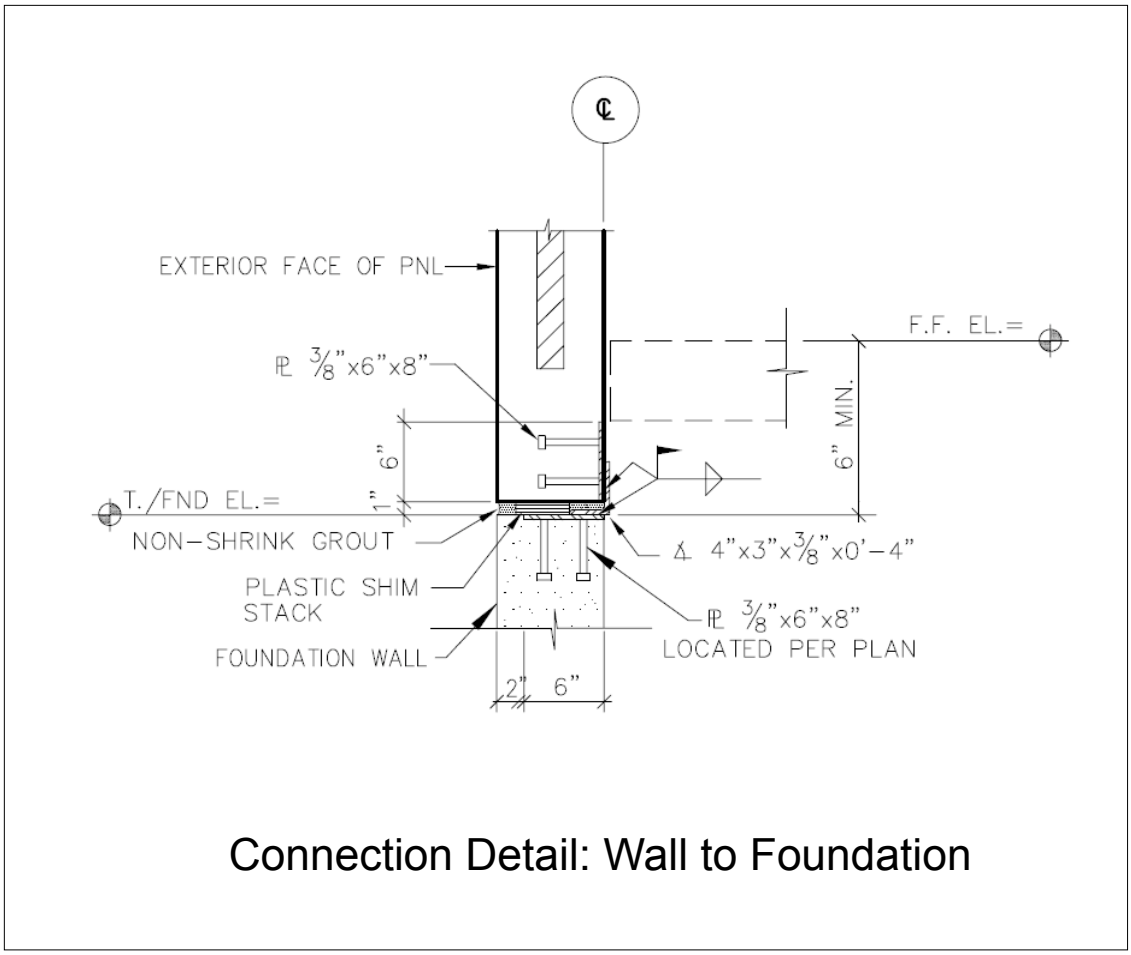
Structural Drawing Using Dukane Precast Double-wall System and T-Slab Roof



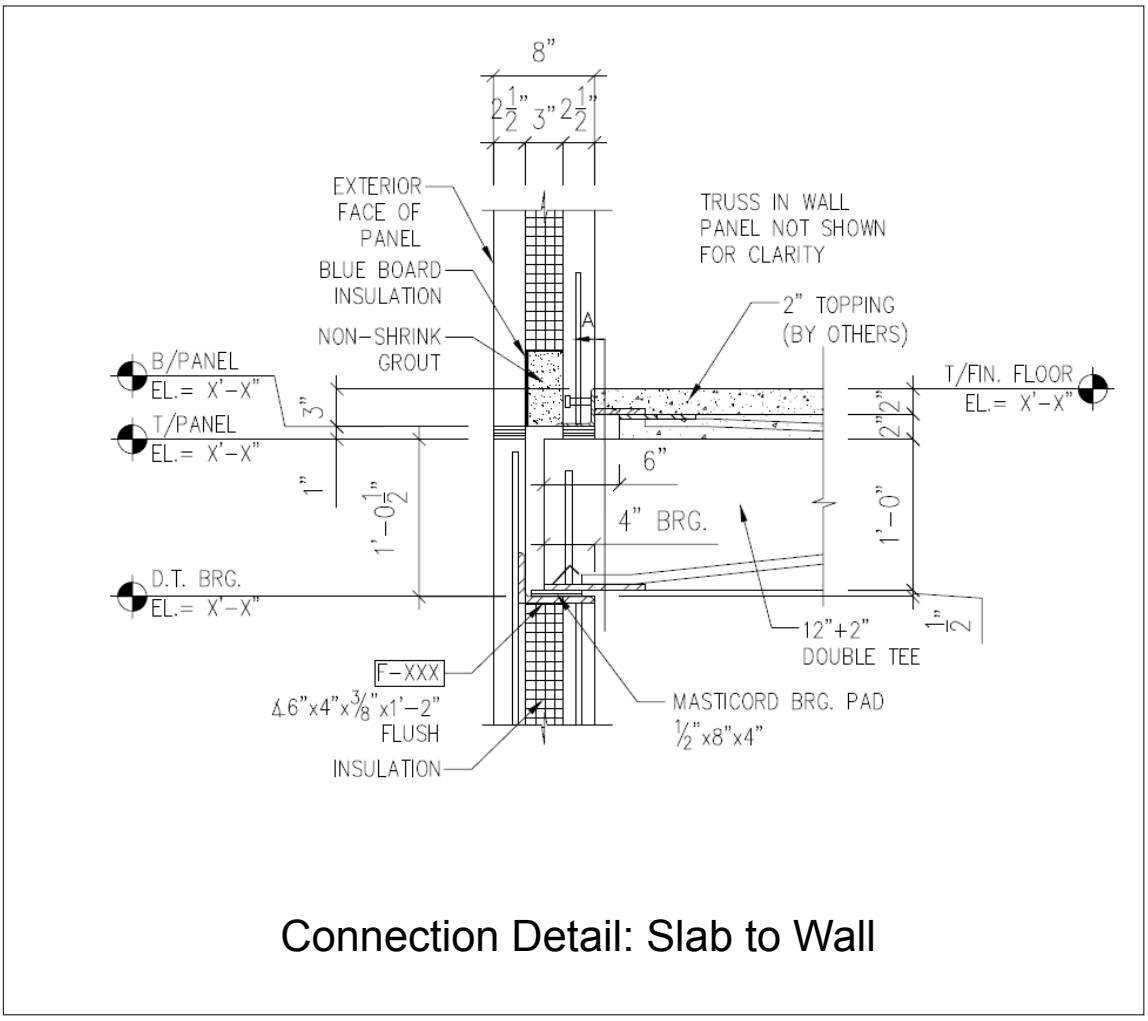
Dukane Precast Construction Details



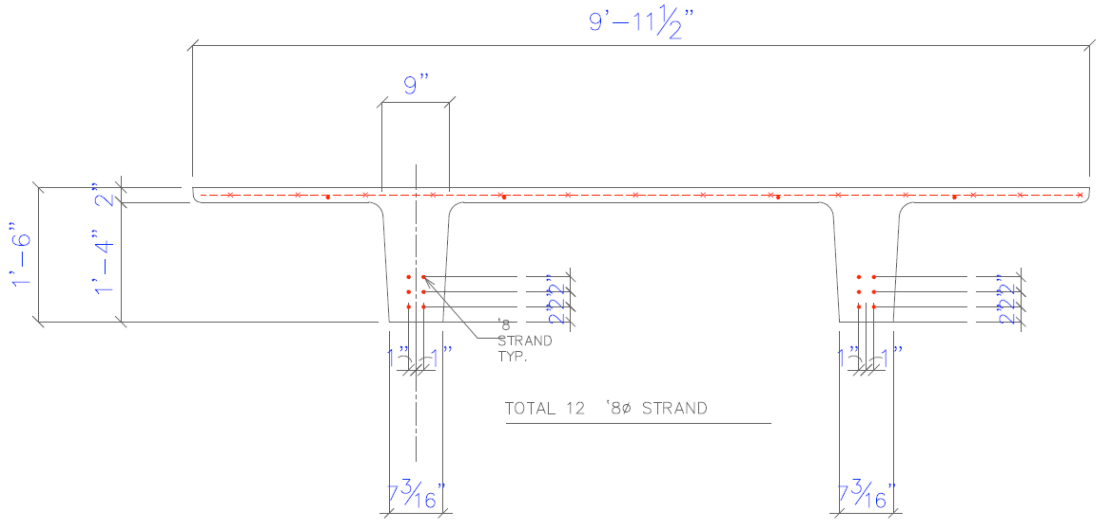
10" Dukane Double Wall Panel



Connection Detail: Wall to Foundation

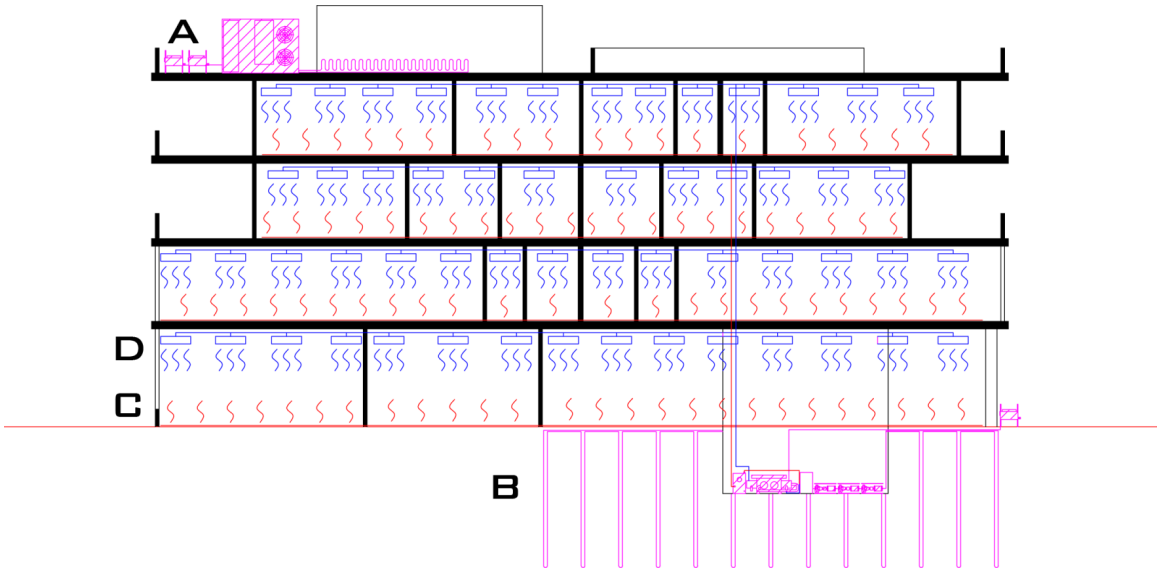


Connection Detail: Slab to Wall



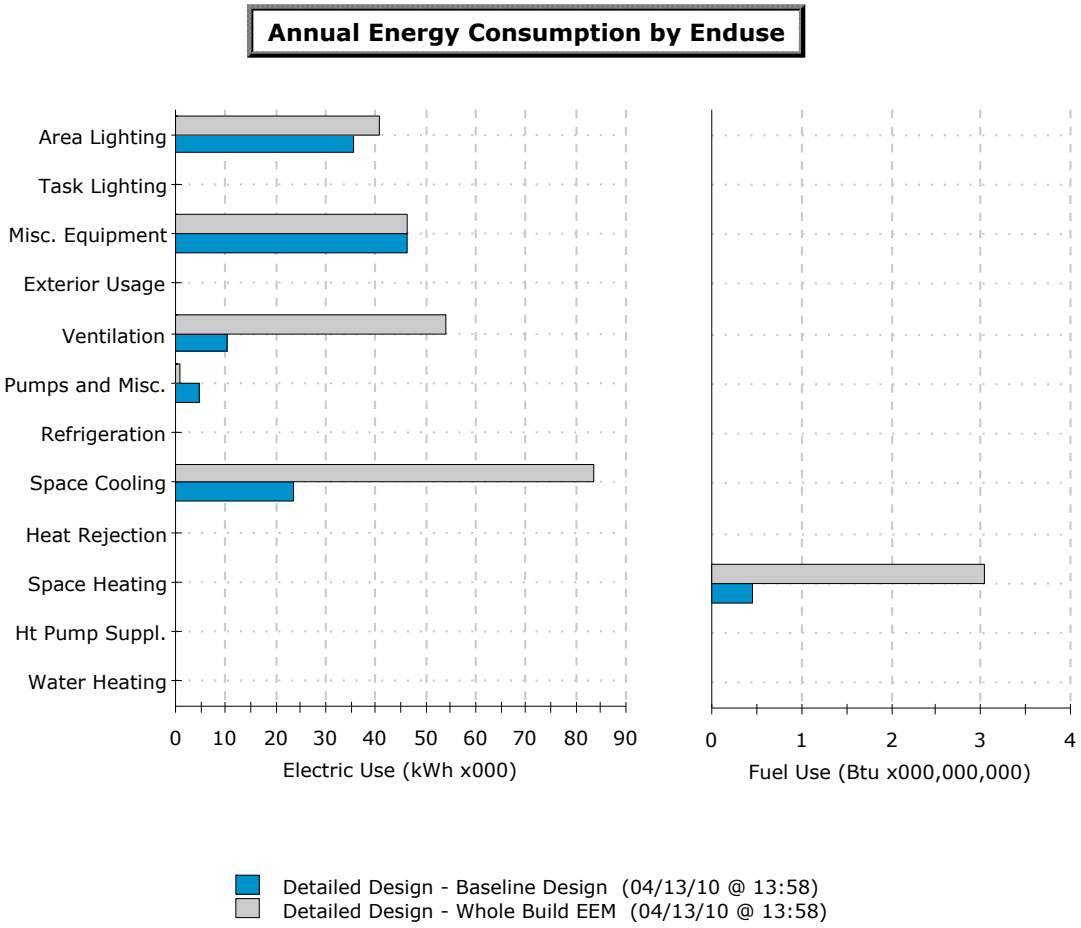
Shallow Double Tee 16DT2

Integrated Green Systems Diagram

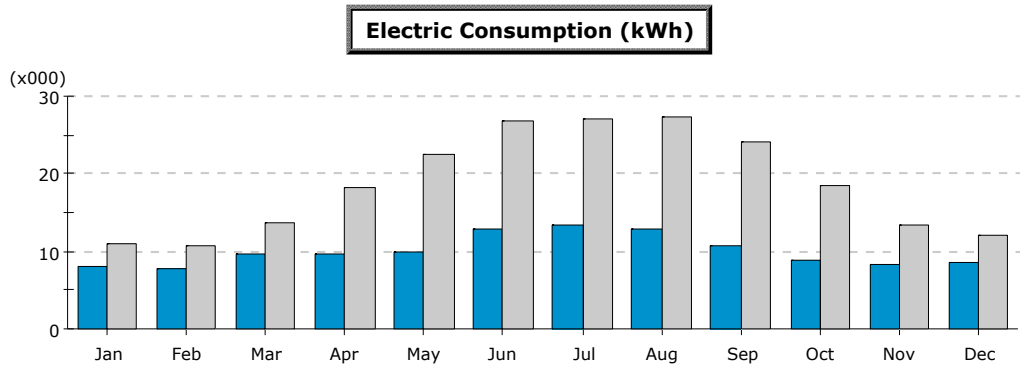


A Passive Solar Water Heater
B Ground Source Heat Pump
C Radiant Heated Floors
D Chilled Beam Ceilings

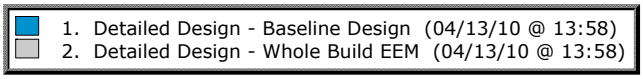
End Use Energy Chart

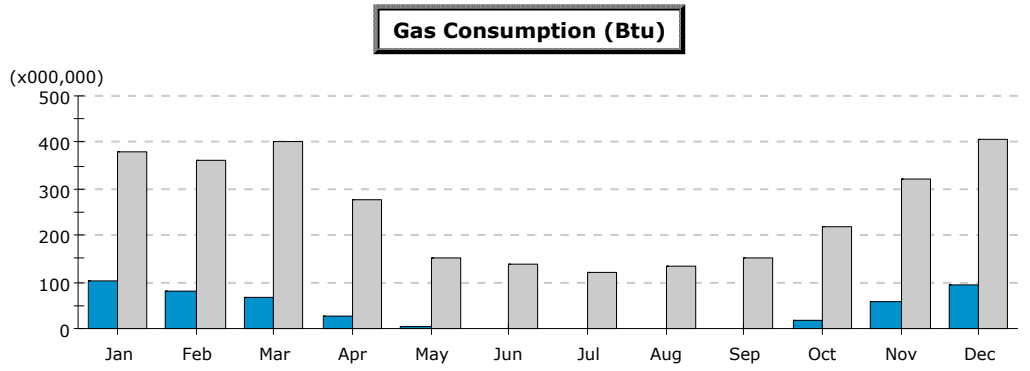


Monthly Total Energy Charts



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Run 1.	7.93	7.88	9.54	9.54	9.98	12.77	13.34	12.88	10.79	8.80	8.42	8.67	120.54
Run 2.	11.02	10.83	13.61	18.10	22.38	26.86	27.17	27.20	24.09	18.50	13.41	11.93	225.11
Run 3.													
Run 4.													
Run 5.													





	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Run 1.	104.8	79.7	66.2	27.4	4.9	0.5	0.5	0.5	1.4	18.9	56.7	95.1	456.5
Run 2.	379.1	360.4	401.8	277.0	150.3	137.1	118.5	135.6	149.6	219.6	319.6	406.6	3,055.4
Run 3.													
Run 4.													
Run 5.													

Monthly Utility Costs Chart