2023

ARGUS University Challenge

Stadium Living: Revitalization and Preservation of the 8th Wonder

It's February 2023…

Introduction
An adaptive reuse project was recently placed on the market for sale. Your task as the acquisition team for a National REIT (Real Estate Investment Trust) is to evaluate and model a potential purchase of a completed but unleased project using ARGUS Enterprise ("AE"). The asset is the former Houston Astrodome ("Dome") now renamed by the current redeveloper, Turning Park Development ("TPD"), as Astro Parque ("AP"). TPD was awarded the rights to redevelop Phase One of a two-phase project of the Dome. The second phase is under redevelopment but is not part of this sale.

Your tasks are to conduct independent market research into the local submarket surrounding the redevelopment location, which is home to the Houston Astros and Houston Texans, both professional sports teams, and a concert venue. Due diligence for acquisitions involves researching and validating market rents, operating expenses, financing, and yields. AP Phase One includes apartments, retail, and monthly public parking. Once the market validation is complete and key variables are known, the group is then to enter the information into AE and prepare an investment memo for the investment committee.

Major Assumptions
Your acquisitions team should assume the following:

- Assume that the Seller, TPD, was awarded the rights to redevelop the Dome for Phase One.
- Assume the Phase One renovation plan was approved and funded (Harris County along with other Federal and State grants).
- The approved concept plans for exterior elevations, floor plans, and rentable square footage for each component are included in the case study. A reminder that the information provided is only a starting point and should not be solely relied upon in conducting market research. This site includes the following Seller information:
    a. Concept plans
    b. Background on the area
    c. Expense data for multi-family
    d. Information regarding the apartment market in Houston
- You can assume that a certificate of occupancy is issued by February 1, 2023. Your group who is evaluating the purchase of Phase One should then assume the leasing risk for the apartments, monthly parking, and moving into the pre-leased retail. The garage parking is available for monthly rentals for residents and future employees of Phase Two of AP.
- Your task is to evaluate the local market for apartment rents, monthly parking rates, and retail (for eventual tenant expiration) to then evaluate likely market rents / reimbursements, etc. for each and rollover assumptions.
- There is a master ground lease from Harris County to the Seller for the next 99 years, starting February 1, 2023.

For guidance, a **Challenge Rubric** is included herein to follow as a format for submission to the acquisition committee.

DEI Requirements
This University Challenge will also need to incorporate Diversity, Equity and Inclusion initiatives that meet a REIT's internal requirements. Take the following into account when researching, modeling, and putting together the final case for submission. The case should use an approach that addresses DEI as part of the investment plan relative to hiring, engagement in the local community, operation of the asset, and address opportunities for Texas Southern University (one of the largest historically Black colleges in the United States) for mentorship opportunities and fostering a degree in commercial real estate.

Developer Background, Turning Park Development

The Seller, TPD, is a firm that partners with local municipalities to solve their economic needs via their real estate holdings. To this end, they engage the local stakeholders of a city and/or town, surrounding businesses along with its residents to simply understand their individual and collective needs. They then evaluate (“reimagine”) the real estate to provide the solutions. This approach is “opposite” of typical developers who seek a solution based on meeting their own goals first then approaching the stakeholders for financial support aka tax incentives etc. TPD does not lead with the “ask.”

TPD conducted due diligence and spent time speaking with the stakeholders including a local historically black college. Based on the feedback, they determined the optimal solution for the real estate. The redevelopment plan was finalized, approved, and work priced out (e.g., General Contractor, Architect, Civil Engineers). Now that the project is nearly finished, they are selling the asset. Closing of the sale will require the Seller to issue a Certificate of Occupancy and signed leases for retail tenants.

The prospective buyer in this case (your group, the REIT) should assume that when arriving at a purchase price for AP Phase One that your group requires at a minimum a 25% Equity Leveraged IRR over an assumed holding period of 17 years. The threshold “Parallel EIRR” (what portion of the overall IRR is attributable to cash flow vs. reversion) should at a minimum comprise 75% from cash flow over the holding and 25% from reversion (terminal cap rates are part of the research) in year 18. You can exceed the 25% Equity Leverage IRR threshold, yet your investors expect these thresholds at a minimum. The metrics will be included as part of your AE run and then articulated in the Investment Memo to be prepared for review by your REIT acquisition committee.

The Asset and the Adaptive Reuse Plan

In devising the adaptive reuse strategy, the architect and TPD have taken the following into consideration:

- The cultural breadth and depth of the surrounding community that includes a strong Hispanic population along with the storied history of the nearby Historically Black College – Texas Southern University.
- Meeting the needs of the surrounding uses and compliment those uses to further enhance their appeal. This is centered around the NRG Center/Stadium and Arena.
- Phase Two will include a flagged hotel, a charter school and experimental offices that are leased to start-up firms that are devising methods to extend the life of batteries for vehicles/equipment/medical devices.
- Phase Two should not be considered as part the valuation metrics.
- The “field” of the Dome will become a botanical garden that includes walking paths.
- The design will be culturally sensitive to the rich traditions of the neighborhood.

History of the Astrodome[1]

The Astrodome is Houston's most significant architectural and cultural asset. Opened in 1965, and soon nicknamed the "8th Wonder of the World," the world's first domed stadium was conceived to protect sports spectators from Houston's heat, humidity, and frequent inclement weather. The brainchild of former-Houston Mayor Roy Hofheinz, the former Harris County Judge assembled a team to finance and develop the Dome, with the help of R.E. Bob Smith, who owned the land the Astrodome was built on and was instrumental in bringing professional baseballs' Colt 45s (now the Astros) to Houston. The Astrodome was the first Harris County facility specifically designed and built as a racially integrated building, playing an important role in the desegregation of Houston during the Civil Rights Movement.

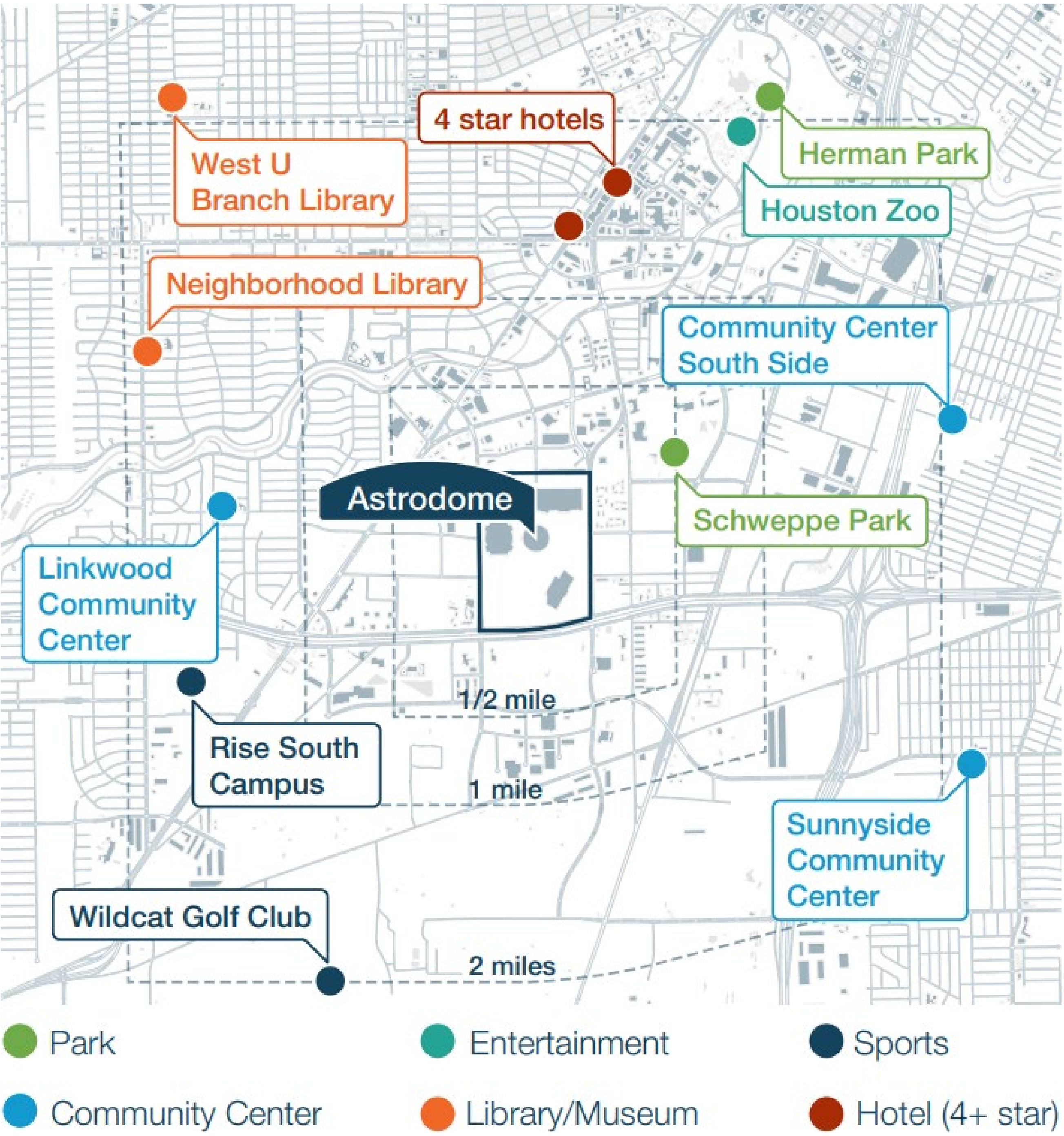
The Astrodome was revolutionary for its time as the first fully enclosed and air-conditioned multi-purpose sports arena – an engineering feat of epic proportions. The innovation, audacity, and "can-do" spirit of Houston at mid-Century was embodied in the Astrodome. It was home to multiple professional and amateur sports teams and events over the years, as well as hosting the annual Houston Livestock Show and Rodeo (HLSR), concerts, community, and political events. When the skylights that make up the roof of the Dome prevented outfielders from seeing fly balls, they were quickly painted over causing the turf grasses that covered the field to die. The solution? Astroturf -- a chemical product developed to simulate real turf grass without the maintenance and dependence on sunlight. The Astrodome was also the first sports stadium in the county to feature luxury skyboxes and suites for owners and super-fans, as well as levels and levels of themed dining and drinking options.

Highsmith, C. M., photographer. The Astrodome, the world's first domed stadium, Houston, Texas. United States Houston Texas, None. [Between 1980 and 2006] [Photograph] Retrieved from the Library of Congress, https://www.loc.gov/item/2011633917/.

[1] *https://astrodomeconservancy.org/wp-content/uploads/2022/03/210611_FS_Eng_History.pdf*

The Surrounding Community[2]

Below is a map of some of the amenities near the Astrodome, including parks, community centers, libraries, museums, and amateur sports facilities that are open to the public. Four Star + luxury hotels are also included. Understanding what amenities already exist can give better insight into what will be most useful for the immediate community in terms of public benefit.



[2] *https://astrodomeconservancy.org/wp-content/uploads/2022/03/210611_FS_Eng_Funding.pdf*

Acquisition Information

The below information is provided to help prepare a Discounted Cash Flow ("DCF") analysis in AE. Reminder that some of the information below will require additional research for modeling and investment reasoning purposes.

Property Level Details

The DCF run that is to be performed on Astro Parque Phase One will span 17 years, plus an additional year for reversion calculations. AP Phase One is considered a mixed-use property type that incorporates both apartments and retail leases, and with the certificate of occupancy being issued by February 1, 2023, assume the same date for the analysis and valuation dates.

With AP located at 8400 Kirby Drive in Houston, Texas, USA, ensure that the data inputs are using the U.S. Dollar (USD) for currency and square feet (SF) for area measures.

AP Phase One will have multiple area measures including the total Building Area, individual area measures for each of the levels one through ten, along with specific area measures for the restaurant, retail, parking, and additional metrics. To accurately account for the AP Phase One area measures, refer to the **Building Areas** section located in the Appendix: Architectural Renderings.

A member of the senior staff at your REIT is quite concerned about rising inflation as the USD is watered down by excess Federal Government spending. Your group is responsible for researching and defending the inflation rates applied and used in the AP Phase One modeling.

Property Level Revenues

AP Phase One has multiple types of property level revenues that need to be taken into consideration when creating the DCF analysis. This is a mixed-use project that encompasses both retail and apartment leases. Consideration needs to be taken when modeling the potential property level revenues.

Your group has been tasked with researching the apartment revenue likelihoods for AP Phase One that include, but are not limited to Background Checks, Application Fees, and charging residents Water & Sewer Fees.

AP Phase One residential apartments are taking advantage of the growing population of pet owners who have previously found it difficult to find housing that did not discriminate based on pet type, size, and / or breed, while still abiding by the Harris County Animal Regulations and excluding animals labeled under the "Dangerous Wild Animals Regulation." Understanding that pet owners are willing to pay additional fees on top of their rent, AP Phase One should include an estimate of potential Pet Fees that can be generated.

At this time, AP Phase One needs parking modeled on a monthly basis for the apartment residents only. Parking for retail employees and other proposed use types for AP are scheduled to be modeled out during Phase Two investment planning.

TPD has provided links to help research the parking needs of AP Phase One, additional and / or alternative research is also encouraged.

https://thestadiumreviews.com/parking/nrg-stadium/

https://www.parkingtoday.com/articledetails.php?id=263&t=whats-it-cost-to-run-your-garage

Property Level Expenses
Your REIT is tasked to research operating expenses and determine the appropriate expense amounts for this project. Real estate taxes are fully abated for all of Phase One for the next 99 years. The following operating expenses have been provided and are broken out into Retail and Apartment.

Operating expenses associated with the retail portion of AP Phase One include:

- Real Estate Taxes
- Property Insurance
- Common Area Maintenance
- Property Management
- Property Management Staffing, broken down by staff members
- Utilities that include the following as sub-lines: Water; Sewer; Gas; Electric
- Additional retail operating expenses should be considered with Class A retail

Operating expenses associated with the apartment portion of AP Phase One include:

- Real Estate Taxes
- Property Insurance
- Common Area Maintenance
- Property Management
- Property Management Staffing, broken down by staff members
- Leasing Staffing, broken down by staff members
- Utilities that include the following as sub-lines: Water; Sewer; Gas; Electric
- Additional residential operating expenses should be considered for Class A apartments

All operating expenses associated with the apartment portion of Phase One are not eligible for recovery from the retail leases. The only expenses eligible for recovery by retail tenants are the operating expenses associated with retail.

Even though AP Phase One is newly re-developed, your REIT thinks it is a wise decision to also incorporate a Capital Improvement Plan (CIP) as part of the capital expenses within the DCF valuation. A CIP is a short-range plan, usually four to ten years, which identifies capital projects and equipment purchases, provides a planning schedule, and identifies options for financing the plan.

Ground Lease Expense
There is a Ground Lease between Buyer and Harris County. Assume the AP Phase One will be ground leased to the Buyer for $125,000 per year for the next 99 years. The Ground Lease begins February 1, 2023. A 1% fixed step annual increase is applied to the Ground Lease. To have the Ground Lease appear as its own line item on the cash flow, ensure the Gearing is set to Tenant Market Rent. The ground lease will be subordinated to lender's debt.

Retail and Restaurant Lease Information
The retail and restaurant portion of AP Phase One is already pre-leased out. The following contract lease information has been provided to enter in the Tenants – Rent Roll sub-tab of AE. All spaces are located on Level 4 of AP and are available at the beginning of the analysis, but some of the leases will start after the analysis begin date according to their contracts.

Refer to the **Appendix: Architectural Renderings** to see additional information.

Name Area (SF)	Start Date Term / Expire	Rental Income	Recoveries	Additional Options
Food Hall **7,984**	Analysis Begin 15 Years	$35.00 / SF / Year 1% Annual Fixed Step	Net Share of all Retail Operating Expenses	
Whattaburger **4,503**	28 March 2023 10 Years	$32.00 / SF / Year 3% Annual Fixed Step	Net Share of all Retail Operating Expenses	Upon expiration, a 5-Year Option Lease is available
Memorabilia Shop **3,199**	12 May 2023 31 May 2030	$24.00 / SF / Year $0.25 / SF / Year Annual Fixed Step	Net Share of all Retail Operating Expenses, excluding all Property Management Fees	Apply a 5% percentage rent with a natural breakpoint with a predicted sales volume of $1,000,000
Truth BBQ **8,000**	01 July 2023 15 Years	$32.00 / SF / Year 5% Fixed Step every 5 years	Net Share of all Retail Operating Expenses	

Reminder as part of your research, evaluate rollover costs for each of the above tenants once the leases expire. Separate roll over assumptions should be assumed for retail shops and restaurant spaces.

Residential Lease Information
AP Phase One residential apartments are the largest portion of leasing opportunity for this project. No contract lease information has been provided and the units are currently sitting empty, waiting for the February 1, 2023, date to allow residents to start moving in. With no apartment contracts to base the multifamily/residential lease revenue on, you are tasked with figuring out appropriate market terms and lease up schedule to enter for this project. TPD has provided the following links as a starting point in the research for local market data, additional and / or alternative research is also encouraged.

https://www.noradarealestate.com/blog/houston-real-estate-market

https://www.houston.org/news/houston-among-top-markets-new-apartments-22

https://www.marcusmillichap.com/research/market-report/houston/houston-2q22-multifamily-market-report

A general overview of the residential portion of this project is as follows and refer to the Appendix: Architectural Renderings to see additional information.

- 347 Apartment Units with three (3) unit types
    a. 120 - One Bedroom Units
    b. 88 - Two Bedroom Units
    c. 139 - Three Bedroom Units
- Apartment units are located on Levels 4 through 10
- Only one (1) floor plan for each unit type, but rates / amenities may differ pending level location and view.

All apartment leasing information should be entered into the Tenants – Multifamily sub-tab and the Market – Multifamily Market Leasing sub-tab. These leases are to be kept separate from the retail and restaurant leases entered in the Tenants – Rent Roll sub-tab.

Financing of Acquisition
Size the new loan using a Loan to Value (LTV) test. Reference back to the Developer Background, Turning Park Development for the parameters that are being sought after. The loan should be modeled with an interest only period during the residential lease up, then once finished the loan will begin to amortize. Note that in AE the LTV % calculates based on the item referenced in the Property Value field. When Discounted Cash Flow is selected, the LTV% entry is multiplied by the Unleveraged Present Value found in the Present Value report when the Valuation Date and Loan Date align.

Challenge Rubric

Your submission is an *Investment Memo* that should be written as if you were presenting it to your REIT Internal Investment Committee. In addition to the memo, your team must provide supporting AE (avux) files for the judges to review with your written content.

Investment papers in Real Estate must be clear and concise (avoid stating theory and or definitions – assume your committee is comprised of seasoned real estate professionals) to convey the relevant information quickly. It should consist of the following pages in the exact order as listed below. AE Reports, appendices, and citation pages do ***not*** count towards the page numbers.

Cover Letter to Committee *(1 Page Maximum)*
Very high level and make the pitch to invest (aka recommend the purchase price) and why.

Executive Summary *(10 Pages Maximum)*

1. **Mission Statement:** State your REITS' Mission Statement with the minimum targeted leveraged returns. You were provided the minimum financial thresholds which serves as a key part of your statement.
2. **Major Risks & Mitigations:** Identification of the two major risks (and include mitigants) associated with the investment. Recall that the fit out and approval risk no longer exists.
3. **Market Summary:** Summary of Market for each use. Use of a charts and graphics are key to conveying this information. Use the paragraphs following the charts and graphics to provide conclusion-oriented observations regarding the submarket.
4. **Risk Analysis**: Worst case and case for lease up of Phase One. What is the change in the consolidated Equity Leveraged IRR?
5. **Conclusion:** Conclusions as to why this investment meets the expectations and Mission Statement.
6. **Price:** Price offered to TPD and under what conditions to close the transaction.
7. **DEI Requirements:** How this investment meets the REITS internal Diversity, Equity, and Inclusion initiatives for the REIT. What is the plan to include the local Historically Black College as part of the investment and/or operations of Astro Parque?

Analysis *(5 Pages Maximum)*

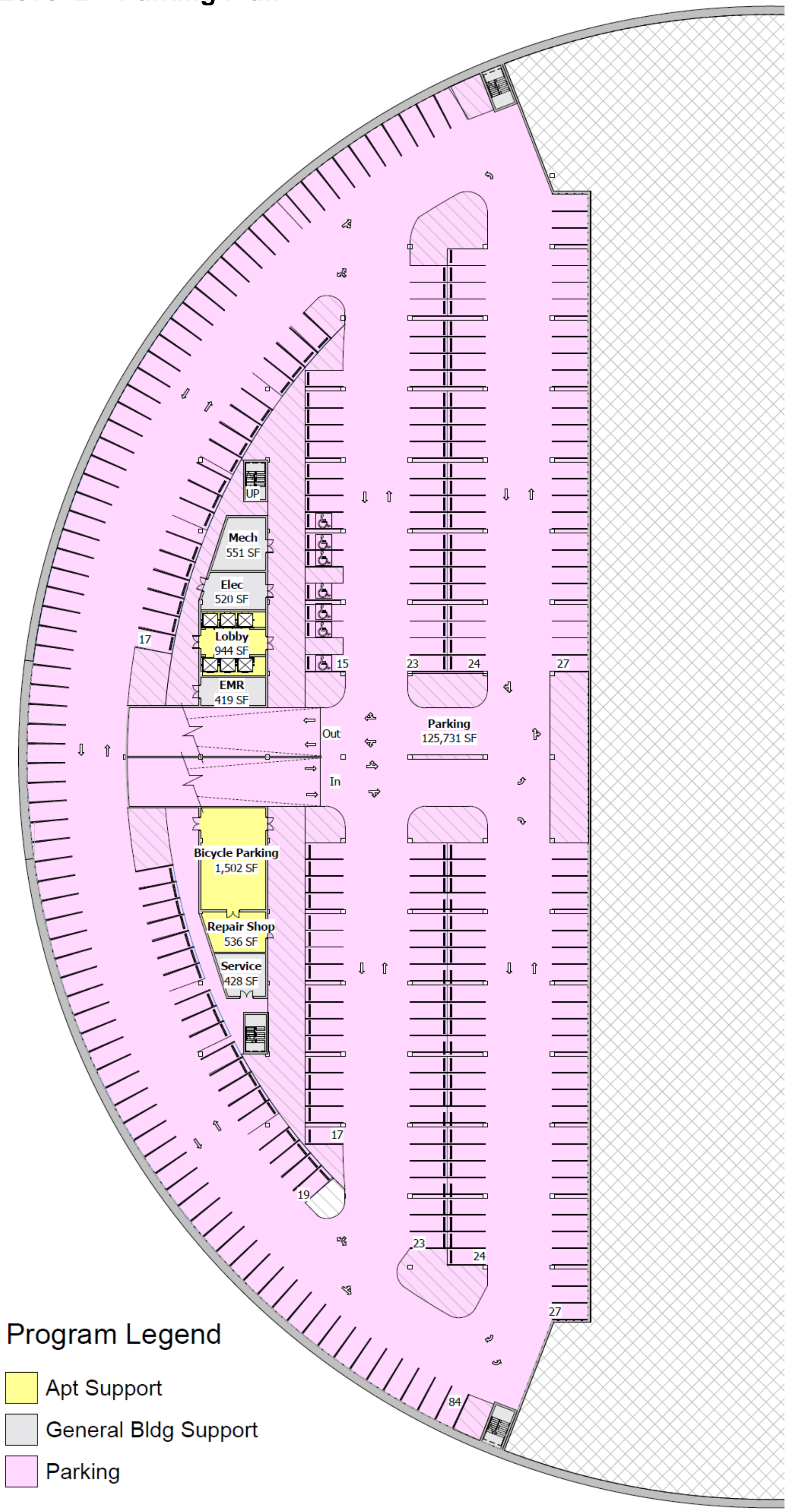
1. Report your underwritten rent, vacancy, and operating expenses for AP that were used in your proforma. Defend your conclusions using the data researched in a summary chart and do not place this data into text. Use the text after the chart to explain your reasoning and defend your conclusions.
2. How does this risk analysis influence your decision regarding a recommendation to purchase this investment?

Conclusions *(2 Pages Maximum)*
1. State the concluded loan terms.
2. Report your Leveraged Equity IRR.

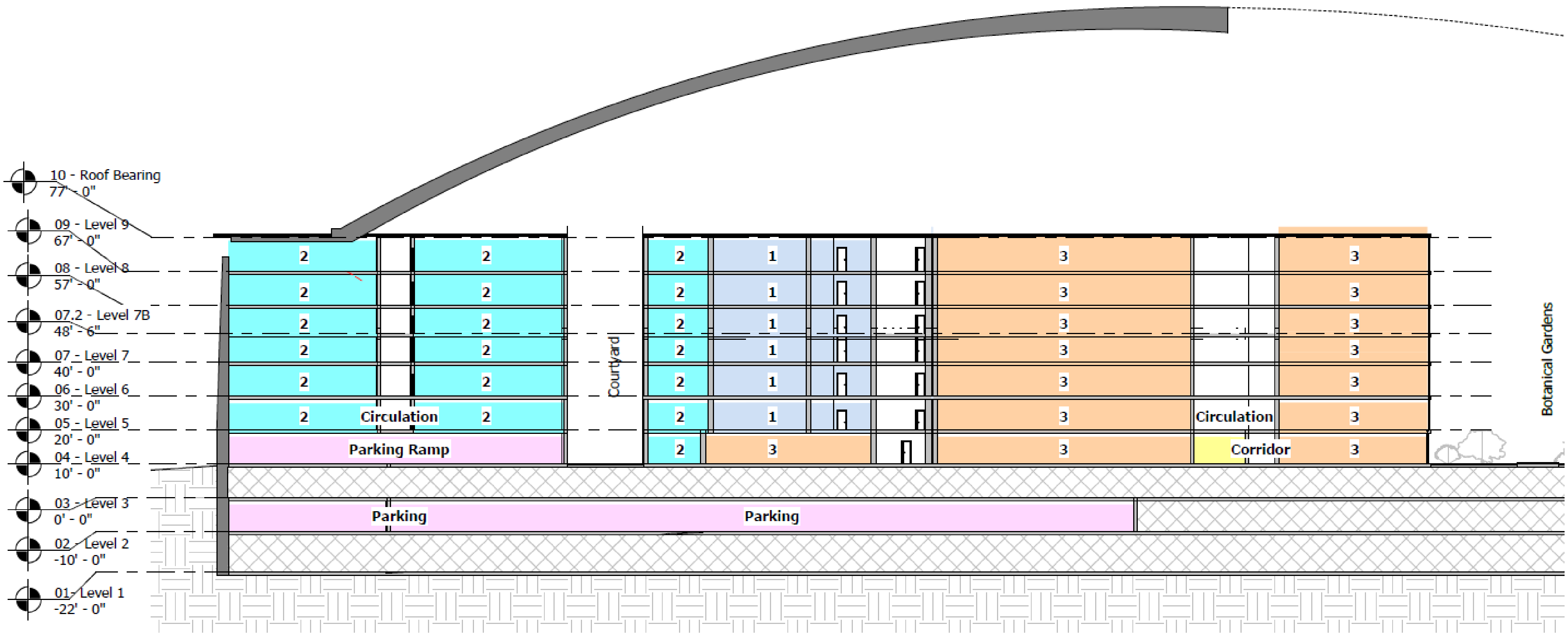
AE Reports, Appendices, Citation Pages *(No page limit – as needed)*

Appendix: Architectural Renderings

Level 2 – Parking Plan



Levels 1-10 – Parking Plan



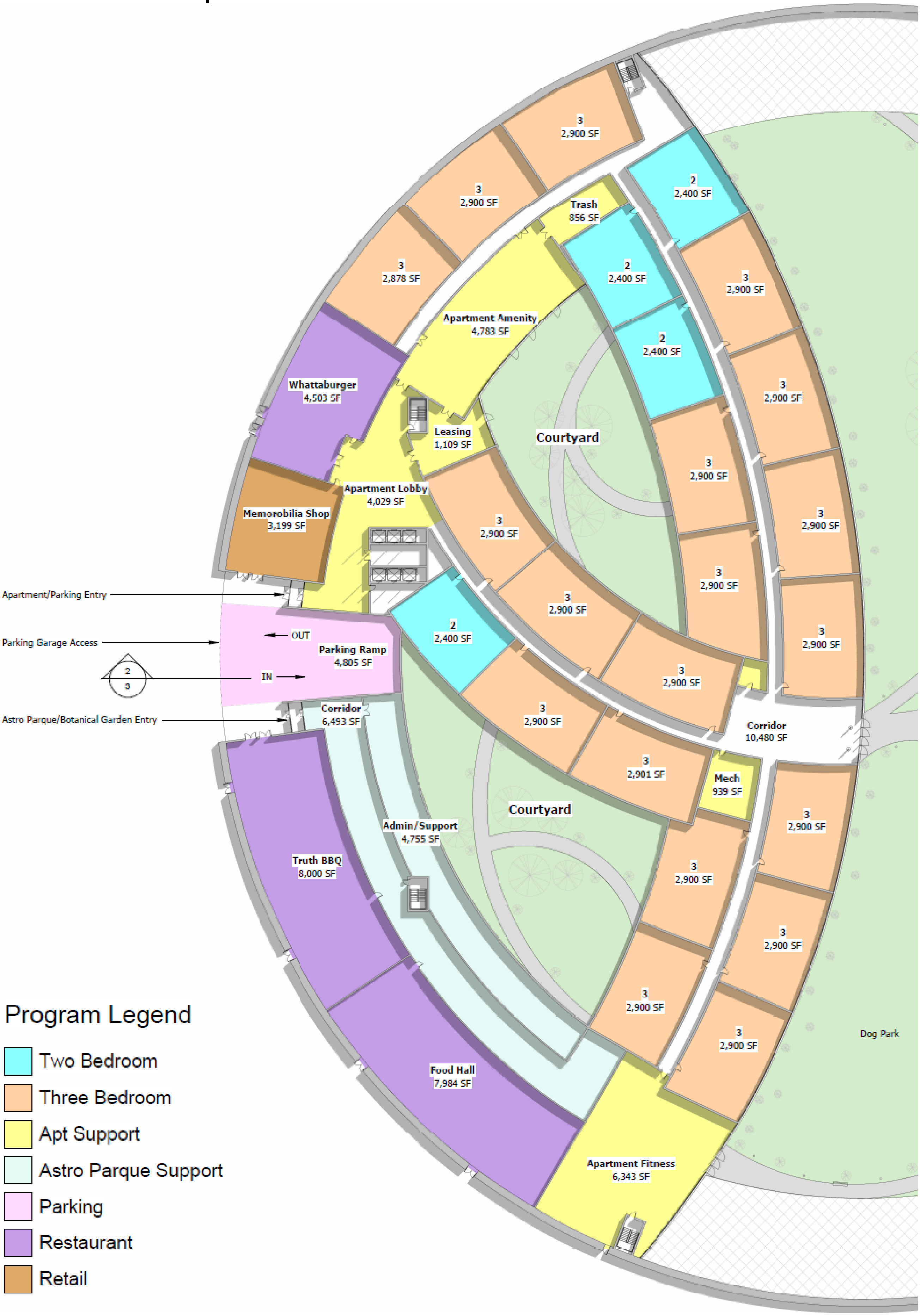
Building Areas

	One Bedroom (900 SF/Unit)	Two Bedroom (2400 SF/Unit)	Three Bedroom (2900 SF/Unit)	Apartment Amenity/ Support	Apartment Circulation	Astro Parque Support	Restaurant	Retail	Parking	Other Circulation/ Services	*TOTAL/Floor (SF)*
Level 1	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	
Level 2	-	-	-	2,982	-	-	-	-	125,731	3,590	*132,303*
Level 3	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	-
Level 4	-	9,600	55,100	18,280	10,480	11,248	20,487	3,199	4,805	1,672	*134,871*
Level 5	18,000	33,600	58,000	2,851	20,484	-	-	-	-	1,672	*134,607*
Level 6	18,000	33,600	58,000	2,851	20,484	-	-	-	-	1,672	*134,607*
Level 7	18,000	33,600	58,000	2,851	20,484	-	-	-	-	1,672	*134,607*
Level 8	18,000	33,600	58,000	2,851	20,484	-	-	-	-	1,672	*134,607*
Level 9	18,000	33,600	58,000	2,851	20,484	-	-	-	-	1,672	*134,607*
Level 10	18,000	33,600	58,000	2,851	20,484	-	-	-	-	1,672	*134,607*
Total	*108,000*	*211,200*	*403,100*	*38,368*	*133,384*	*11,248*	*20,487*	*3,199*	*130,536*	*15,294*	***1,074,816***
Percentage	*10.0%*	*19.6%*	*37.5%*	*3.6%*	*12.4%*	*1.0%*	*1.9%*	*0.3%*	*12.1%*	*1.4%*	*100.0%*

of Units per Level

	One Bedroom (900 SF)	Two Bedroom (2,400 SF)	Three Bedroom (2,900 SF)	*Total/Floor*
Level 4	0	4	19	*23*
Level 5	20	14	20	*54*
Level 6	20	14	20	*54*
Level 7	20	14	20	*54*
Level 8	20	14	20	*54*
Level 9	20	14	20	*54*
Level 10	20	14	20	*54*
Total	*120*	*88*	*139*	***347***
Percentage	*34.6%*	*25.4%*	*40.1%*	*100.0%*

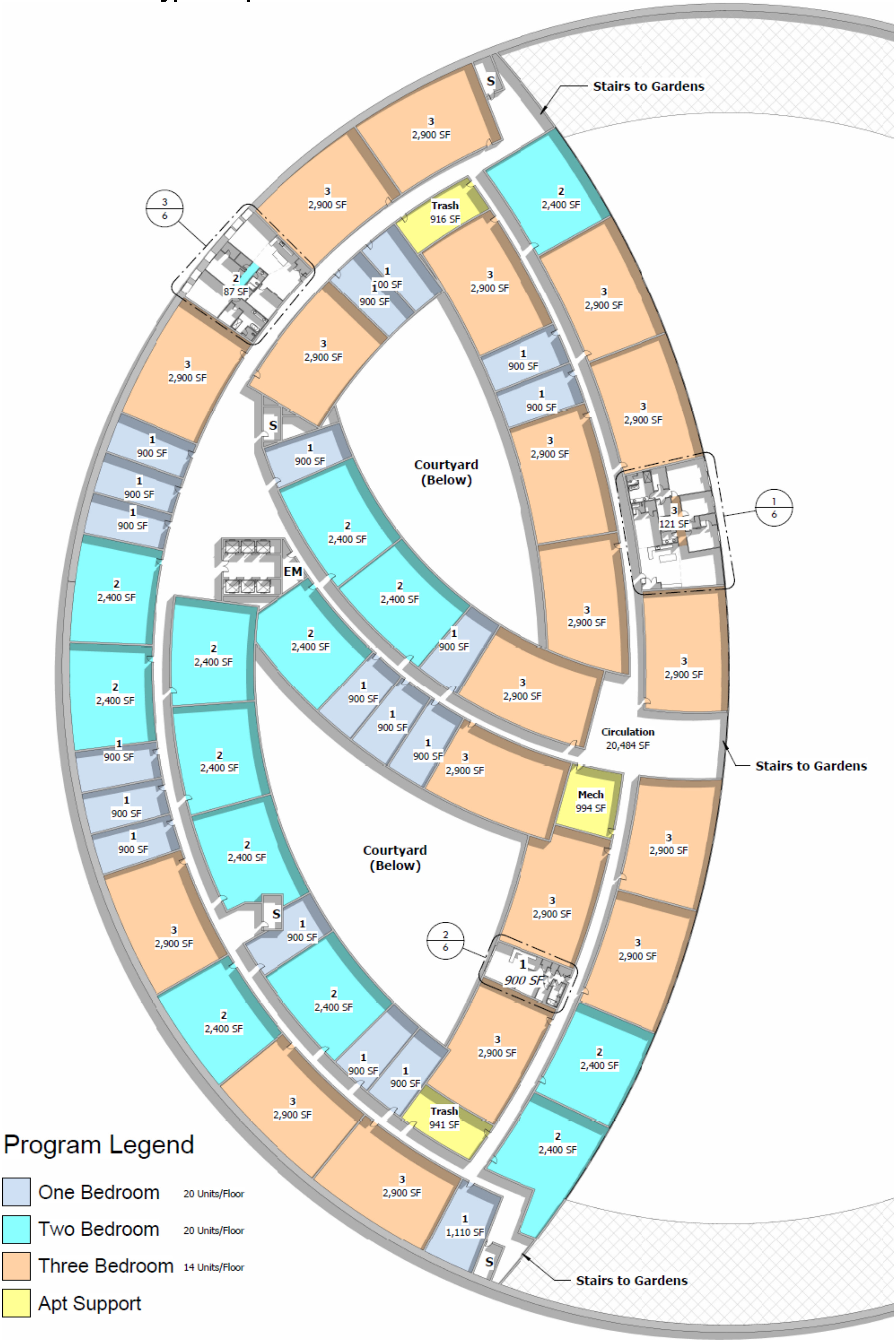
Level 4 - Retail & Apartments



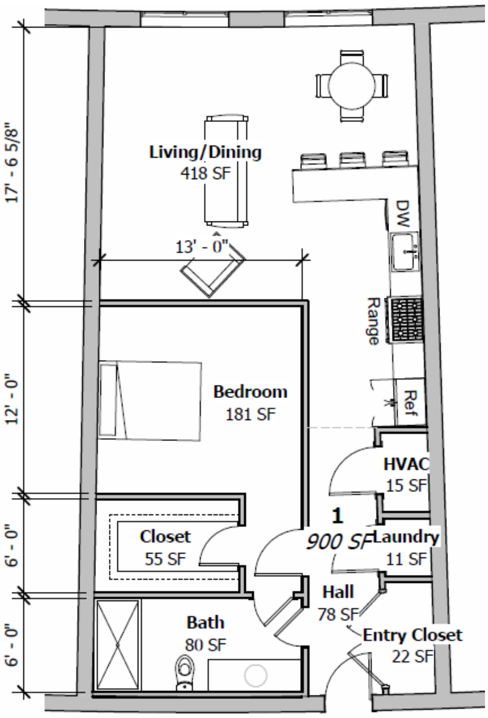
Program Legend

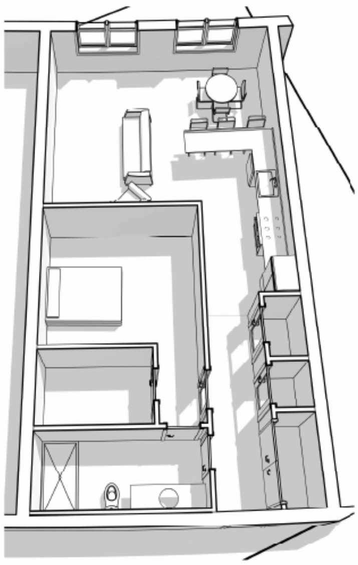
- Two Bedroom
- Three Bedroom
- Apt Support
- Astro Parque Support
- Parking
- Restaurant
- Retail

Levels 5-10 – Typical Apartments



Typical One Bedroom Unit





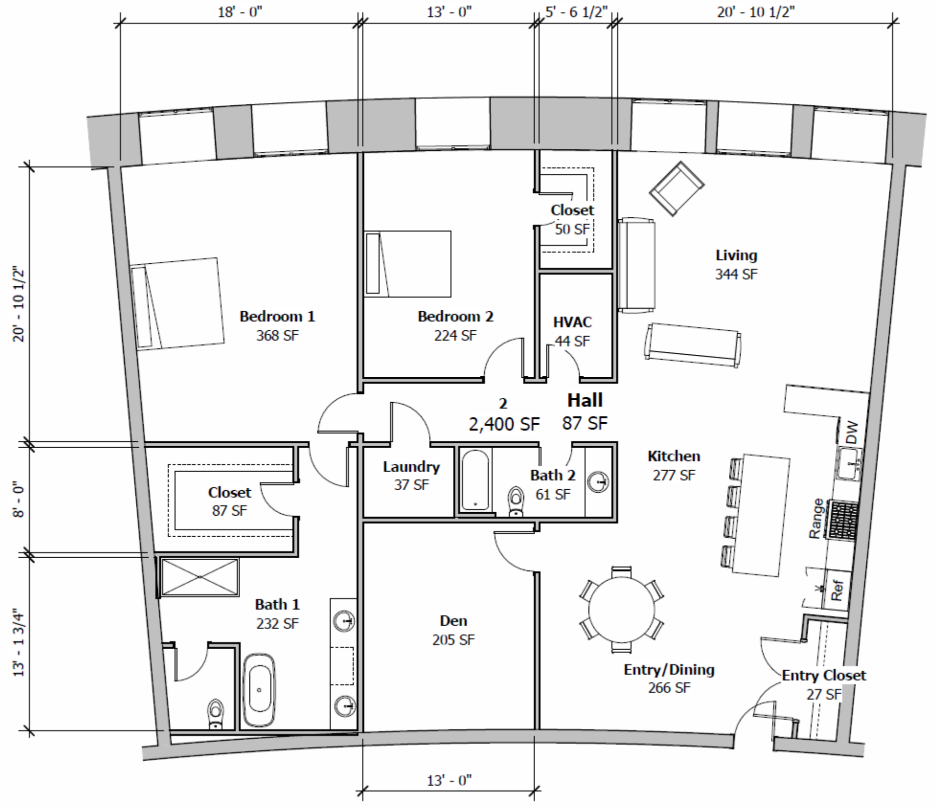
4 One Bedroom 3D Plan

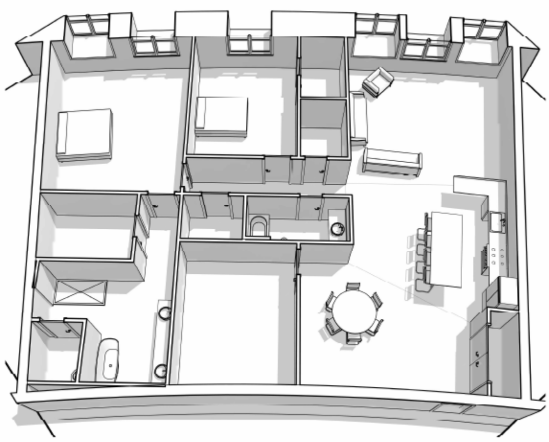
One Bedroom Unit Summary:
Total Gross SF: 900 SF

- Bedroom: 181 SF
- Bedroom Closet: 55 SF
- Bathroom: 80 SF
- Hall: 78 SF
- Laundry: 11 SF
- HVAC: 15 SF
- Entry Closet: 22 SF
- Living Room: 418 SF

Total NET SF: 860 SF

Typical Two Bedroom Unit





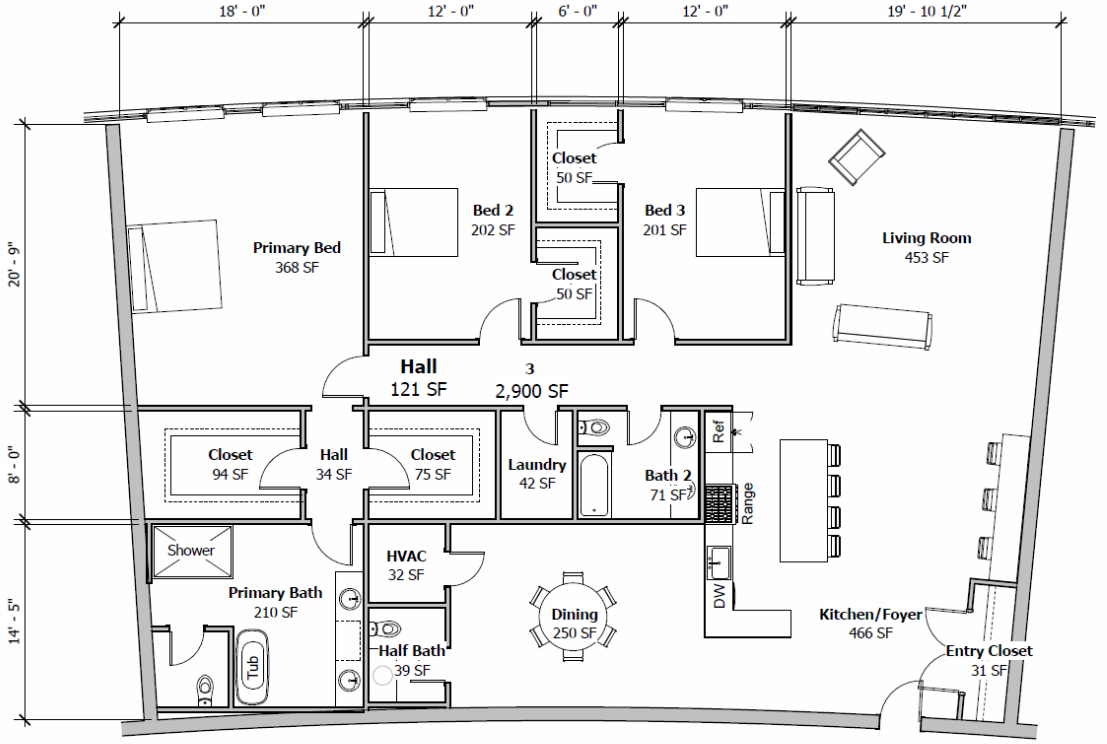
6 Two Bedroom 3D Plan

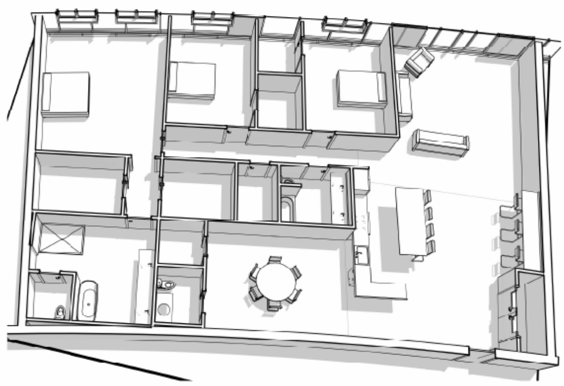
Two Bedroom Unit Summary:
Total Gross SF: 2,400 SF

- Bedroom 1: 368 SF
- Bedroom 1 Closet: 87 SF
- Bedroom 1 Bath: 232 SF
- Bedroom 2: 224 SF
- Bedroom 2 Closet: 50 SF
- Den: 205 SF
- Hall:87 SF
- Laundry: 37 SF
- HVAC: 44 SF
- Bathroom 2: 61 SF
- Entry Closet: 27 SF
- Entry/Dining: 266 SF
- Kitchen: 277 SF
- Living Room: 344 SF

Total NET SF: 2,306 SF

Typical Three Bedroom Unit





5 Three Bedroom 3D Plan

Three Bedroom Unit Summary:
Total Gross SF: 2,900 SF

- Bedroom 1: 368 SF
- Bedroom 1 Closets: 224 SF
- Bedroom 1 Bath: 210 SF
- Bedroom 2: 202 SF
- Bedroom 2 Closet: 50 SF
- Bedroom 3: 201 SF
- Bedroom 3 Closet: 50 SF
- Hall: 121 SF
- HVAC: 32 SF
- Half Bath: 39 SF
- Laundry: 42 SF
- Bathroom 2: 71 SF
- Entry Closet: 31 SF
- Dining Room: 250 SF
- Kitchen/Foyer: 486 SF
- Living Room: 453 SF

Total NET SF: 2,812 SF