

Challenge exercise

Build an initial site layout in Forma Site Design with coasts, hotels, and coffee shops

In this challenge you can work as an individual, or in teams to develop a unique site layout using Form Site Design and following a defined building program.

In this project, you will select a site in a rapidly evolving coastal port area that is seeing an increase in visitor volume, but does not have the amenities to accommodate the tourists. Your first task is to research the potential sites (listed below), select one, and then build the contextual base model in Forma Site Design of a boutique hotel (16 rooms) with a lower-level coffee shop serving locally sourced goods.

Forma Site Design surfaces up data to help you understand the context. The more sites you can observe, from a wide variety of locations, the more you will learn regarding how to leverage the tools to help you with the site layout process. In practice, a designer will often develop solutions for varying sites within a common climate. However, this challenge will ask you to work with a range of climatic conditions (selecting one, and observing solutions across your class).

Your first pass on the site evaluation should be observational: What are the key points of analytical data? What contextual ideas do you instinctually respond to as a designer? As a class or collective or cohort, discuss the different data, contextual issues, and key points from each site.

Refer to the steps to complete for this project at the end of this document.

Potential site locations:

- **Busan** (South Korea): Coastal culture and cliffside temples and serious coffee culture throughout the local villages. The exact location is: 442C+GP Busan, South Korea (the bus stop will now be part of the coffee shop on the lower level). (latitude and longitude: 35.1011188, 129.1218062) (the bus stop will now be part of the coffee shop on the lower level. **Note:** Use the latitude and longitude to set up this project, the address is a bit unreliable.
- **Muscat** (Oman): Close to Dubai, without the intensity of city, this location stays closer to the historic typology of the souq (markets) with authenticity creating a more intimate port city. The exact location is: JF98+8P Muscat, Oman. The exact location is: JF98+8P Muscat, Oman (latitude and longitude: 23.6182818,

58.4667976) **Note** – use the latitude and longitude to set up this project, the address is a bit unreliable.

- **Whittier, Alaska** (United States): This is a location for cruise ship tourists heading to the Alaskan Railroad, but too often missed are the waterfalls, glaciers, and marine life of Prince William Sound. The exact location is: latitude and longitude: 60.7746516, -148.6893170.

Building Program:

For this first pass, we will keep the program simple:

- Around 20,000 square feet (2,000 m²) total, with a 4,000-6,000 square foot (372-557 m²) footprint on site, creating a 4-5 story building.
- Lower level: Coffee shop (1,500 sq ft or 150 m²), Lobby and Reception (1,000 sq ft or 90 m²) and lower-level amenities.
- Upper levels: 20 standard king rooms, 6 double queens, 4 suites (10,000 sq ft total or 1,000 m²) with circulation and service spaces to make the upper levels total approximately 16,000 square feet (1,500 m²).
- Features: The design should feature a ground level park for patrons to enjoy their coffees, and a viewing deck on one of the upper-level floors or roof.
- Parking: 30 spaces, with 2 accessible parking spots.
- Outdoor café and park space: 500 sq ft (50 m²)

Complete the required activities:

1. Review each location (Busan, Muscat, and Whittier) and select one site from the list of locations. The site boundaries can be estimated from the following images below, and will be pretty evident when reviewing the satellite photographs:



Figure 1. Busan Site.



Figure 2. Muscat Site.

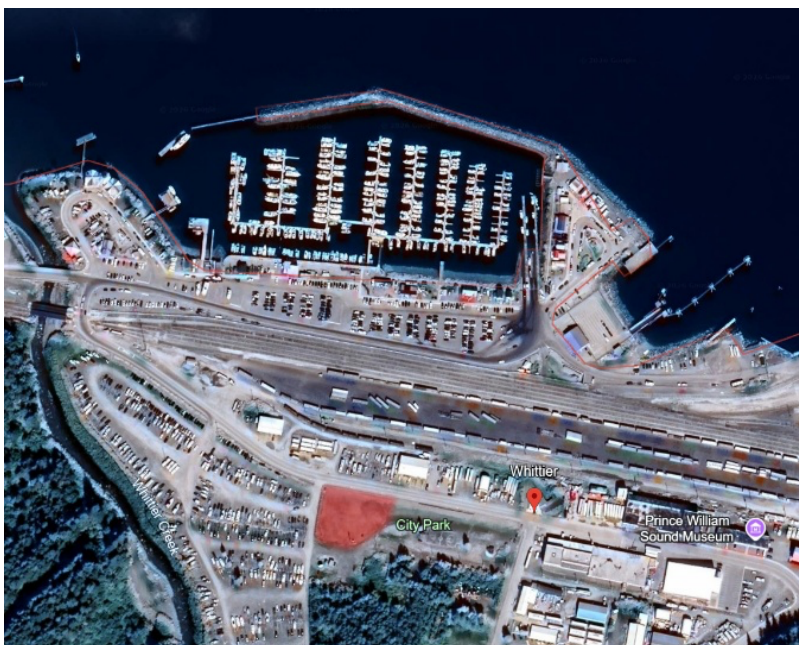


Figure 3. Whittier Site.

2. Create the site and context within Forma Site Design

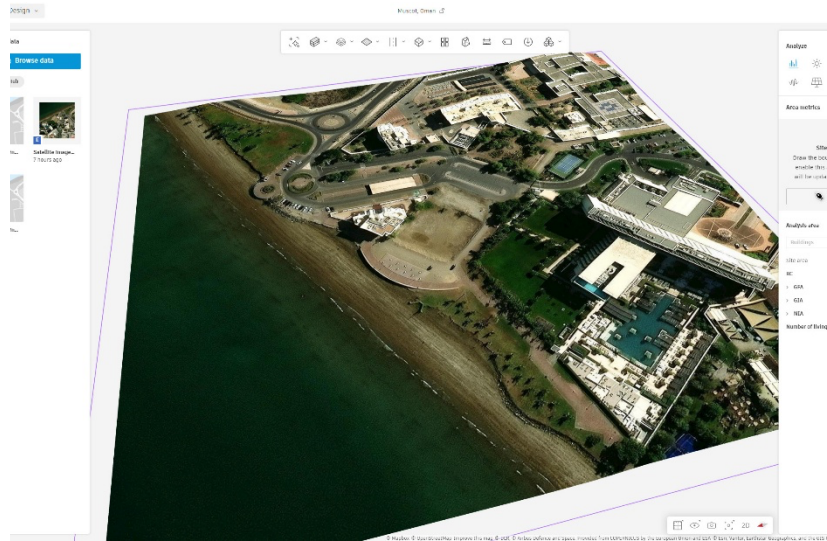


Figure 4. Construct site in Forma Site Design

3. Perform initial site analysis by building an understanding of the climate, weather, analytical data, instinctual information, macro and micro factors to cover the following:
 - a. Explore the intuitive side of the design in the challenge by drawing a diagram (using either analog or digital tools) to explore one of the following items:
 - Scale and proportion by drawing a site section (check heights of adjacent buildings from multiple resources for verification) that extends to at least one adjacent property in each direction of your site section, or extending out to capture terrain and topography.
 - Site plan focusing on circulation regarding pedestrian, public, and vehicular transportation.
 - A figure ground study (drawing only the buildings as solid blocks in plan view to study pattern, density, and enclosure). Note: This is not a great use of time if there is limited density, so do not apply this process to the Whittier, Alaska site.

Analytical and Intuitive:

Analytical:

- Temperature
- Wind
- Noise
- Sun



Intuitive:

- Scale and Proportion
- Flow and Circulation
- Enclosure
- Materiality and Weight



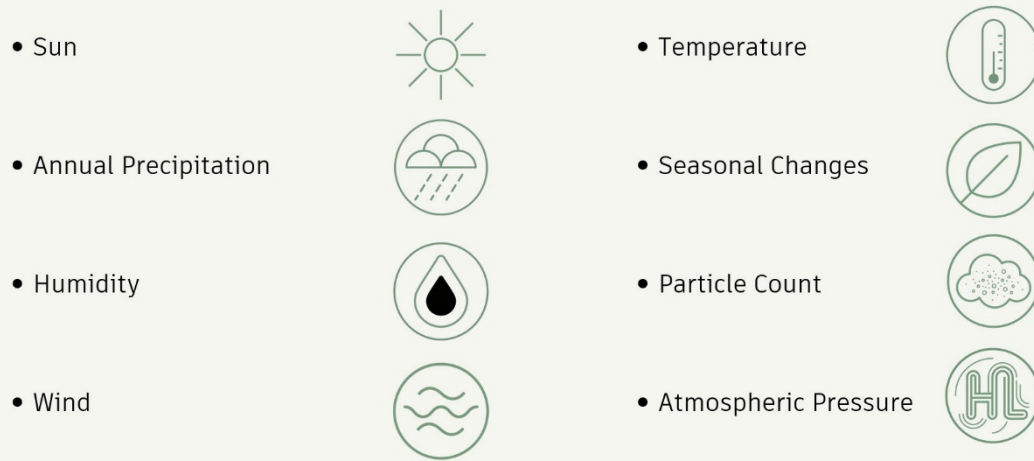
10

Figure 5. Analytical and Intuitive Information

- b. Define what you believe will be the three most important **Macro** site factors and explain why. Note, this will take more of an effort than simply listing: “temperature.” You will need to dig just a bit to define why temperature may be a critical macro site factor. Provide your answer with one to two sentences in your explanation. Your list of options should include, but is not necessarily limited to the following macro factors: Sun, annual precipitation, humidity, wind, temperature, seasonal changes, particle count, atmospheric pressure.

Analyze the site at the macro and micro scale.

Macro:



8

Figure 6. Macro

- c. Define what you believe will be the three most important **Micro** site factors. Understanding micro on any site is going to require keen observation skills, and some extensive visual exploration. Leveraging all sources available to you, select and define three micro factors and explain your decision in one to two sentences. Understand the list from the videos: solar shading, terrain, vegetation, water, physical density, wildlife, albedo, and safety – and also understand that this is only an initial list. For instance, wind acts on the macro scale in terms of direction, but also operates on the micro scale by how might move around a building.

Analyze the site at the macro and micro scale

Micro:

- Solar Shading



- Terrain



- Vegetation



- Water



- Physical Density



- Wildlife



- Albedo



- Safety



9

Figure 7. Micro

Grading rubric:

	Advanced	Proficient	Basic	Emerging
Questions resolved	Well thought out response connecting design intent with data	Correct answers not implicitly tied to the design ideas.	Answers completed, but little to no application to the design	Answers are incomplete and/or incorrect
Is the data presented accurately	Accurate, applied, and presented with understanding	Completed, correct	Minor errors or missed interpretations	The data is either not completed, presented, nor available
Explanations provided with clarity (graphic and/or written)	Design ideas and design data are presented clearly and creatively	Clear responses and graphics	The information and graphics are presented, but not connected or composed	Incomplete or not legible
Creativity in the design solution	The site layout design is innovative, an appropriate response, and is informed by the data in Forma Site Design	The site layout is appropriate, but the connection to the simulation data is not clear	Quality design, but not connected to the simulation data created by Forma	The site layout design proposal does not meet the design criteria