

# IHMC Healthspan, Resilience & Performance Research Complex (HRPRC)

### PRELIMINARY PROGRAM SUMMARY

FLORIDA INSTITUTE FOR HUMAN & MACHINE COGNITION 40 S. ALCANIZ ST. PENSACOLA, FL 32502 hrprc@ihmc.org

# PRELIMINARY PROGRAM SUMMARY

This document is intended for use as a preliminary building program for use by the Architect in this RFQ. It is anticipated that a Construction Managerat-Risk (CMAR) delivery method will be utilized with a tentative completion date of January 2024.

In contrast to the more bureaucratic and siloed organizational structure of traditional organizations, IHMC has developed a highly collaborative and multi-disciplinary approach to global innovation in robotics, AI, and human performance. This more fluid approach to information exchange and project development results in a healthy cross pollination of ideas, engaged team members, and organizational synergy that has been at the core of keeping IHMC at the leading edge of thought leadership in its fields of study.

Project teams vary in size from one person to thirty or more people, reinforcing the need for a high degree of flexibility within the work environment. Teams may include a mix of research scientists, graduate students, post-doctoral students, project managers, and interns. Although each staff member has a primary area or areas of research, there are many areas of overlap, and they frequently are working on multiple projects and teams with varying roles.

In addition to being adaptive to the teaming arrangements and other internal dynamics of their operations, the spaces developed must be able to adapt to changes outside the walls of the organization that establish and modify broad strategic vectors of study - changes in political leadership, cultural shifts, breakthrough technologies, and even global crises. As a global competitor operating at the leading edge of science and technology, this facility will posture IHMC to attract and retain the brightest minds working in these fields today.

Although this facility is intended to centralize human healthspan, resilience & performance research on the IHMC campus, IHMC culture posits that innovation happens through collaboration, so a concerted effort has been made to develop a spatial framework around the building program that allows for and encourages researchers across multiple disciplines to interface in this dynamic workspace. Architects are tasked to optimize people, not square footage to create a highly collaborative environment.

# PRELIMINARY PROGRAM SUMMARY

The building may be developed as a four-story, approximately 44,000 s.f. structure (not to exceed 75ft in height), with stacking and adjacencies corresponding to the functional needs of the two primary research cores while distributing Office/ Administrative areas on each floor to encourage collaboration. The resulting building mass may or may not stack into equally-sized floor plates.

The first floor should maximize program area for the Research and Applied Research Core due to the operational need for the human performance and resilience testing (part of the Research Core). These areas are to be readily accessible to public program participants throughout the day – often either before or after typical work hours (9 a.m to 5 p.m.).

Participants arrive at the facility, check-in, and may change clothes prior to testing. Testing varies from a few minutes to over an hour, can occur in more open areas like the Research Trials Facility to more private areas like the Metabolic Chamber, and varies greatly in activity/ exertion from swimming, to running, to resting.

The second floor may be comprised of the balance of the Research Core areas not included on the first floor. A portion of this space will overlook the Research trials area – becoming a natural gathering area including a significant component of public tours to showcase the facility. Public access will be limited to the first and second floor only.

The upper two floors are likely to be designated for offices, additional research, and laboratory space. The primary functional component for this program is laboratory space, and they are located on these floors to facilitate venting and create separation from the public areas. Consideration should be given to the fourth floor as a highly valuable space with views across downtown Pensacola.

### ARCHITECTURAL CONTEXT

The site is located at the termination of Garden Street at St. Michael's Cemetery and Alcaniz Street, and the two zoning districts (HC-1 and C-2A) which overlay a portion of the site reflect the very different architectural characters of each. The street, originally designed as a location for individual garden plots for early settlers and later transformed into a boulevard, creates a strong, highly-trafficked border along this northern edge of downtown. The street is lined with sidewalks and trees, but the buildings vary greatly in size, style, and quality as it relates to the street edge which, when combined with the boulevard scale of the right-of-way, makes the overall pedestrian experience rather haphazard walking from Palafox Street towards this parcel, particularly on the southern side of the street.

At this eastern end of Garden Street, most of the historic fabric with smaller commercial buildings placed close to the street has been replaced with larger lots and buildings of a more recent eras. Immediately to the west is the recently completed 5-story ServisFirst Bank building, fully clad with masonry and large, vertically proportioned fenestrations, with some reductive parallels to the Levin Center massing and fenestration. Across Garden St. to the north is the 4-story mixed-use condominium, Carlton Palms – an eclectic mix of faux-mansards and towers, enrobing a 1970s-era motor court and fully surrounded by parking. The architectural context of this area of Garden Street and the representative buildings proximate to the site in the C-2A district should be considered secondary to the context of the HC-1 historic district structures and setting when developing site and architectural solutions.

The site anchors the HC-1 Historic district which contains a more intact and consistent architectural character with generally older, smaller scale structures, and a pedestrian scale created by the combination of narrow street widths, narrow lots and setbacks, landscaped medians, sidewalks, and street trees. Immediately to the south are two 1-story commercial buildings which utilize a simple masonry vernacular and limited adornments. A mix of masonry structures and wood cottages populate the fabric, and the variety of commercial, retail, and residential buildings create a vibrant streetscape for pedestrians. This pattern extends several blocks to the south with Alcaniz Street forming the central spine of this historic development pattern which terminates at Seville Square and Bartram park with views across the bay.

### ARCHITECTURAL CONTEXT

The use of these pedestrian-centered planning features and attention to streetscape, building scale, and historic sensitivity, evident throughout the HC-1 district, and utilized in the development of the Levin Center, should be incorporated in any proposed solution for the HPRRC. Moreover the new facility should be developed as a complement to the Levin Center, creating a discernable and legible campus architectural style for IHMC.

As indicated on the Development Requirements diagram (see p. 18), the building should be sited with its address on Alcaniz Street. Special consideration should be given to the site's location separated by Alcaniz Street from the rest of the IHMC campus as it relates to encouraging and providing safe pedestrian movement between IHMC campus facilities.

### ARCHITECTURAL CONTEXT



Levin Center west façade and main entrance – primary materials of masonry, glass, and metal



Entry sequence at Levin Center



East façade of Levin Center showing site development, landscaping, and stormwater approach – from Florida Blanca St.



Screened, controlled access parking and pervious pavers to support existing facilities

### ZONING

The City of Pensacola Planning and Zoning Department has confirmed the subject parcel lies within two zoning districts, one being HC-1: Historic Commercial District, and the other being C-2A: Downtown Retail Commercial District. The future land use (FLU) is "Historic and Preservation".

### **SETBACKS, YARDS, & PARKING**

Required setbacks and buffer yards are as noted below. Please note, the majority of the site being proposed for development lies within the HC-1 District.

### **C-2A Zoning Requirements**

No Minimum Building Setbacks are required except where adjacent to residential use. When applicable, a twenty (20) foot buffer is required.

Lot Coverage – Shall not exceed 100 percent of the total site area.

Building Height Limit – 100' above adjacent grade maximum at property line.

Note, the City of Pensacola has indicated that zoning lines on a split zoned lot can be shifted 50 feet administratively.

### **HC-1 Zoning Requirements**

The portion of the site zoned HC-1 is located in the 'Brick Cottages District'. Any of the three streetscape types included within this document may be developed within this zone, with requirements based on the selected type.

Based on the use and scale of this structure, however, Streetscape Type 3 has been selected as the most appropriate. Allowable building heights are based on the adjacent lots' building heights. The building adjacent to the property's western border is the ServisFirst Bank with a height of 74 feet. However, the lots adjacent to the south are only one story tall, and the lot across the street is two stories (IHMC Main Facility, Building 40). So, depending on where the building is located on the lot, a variance may be required.

Setbacks for Streetscape – Type 3 are 6' from the street edge on the front, 0' on the side, and 15' on the rear. See pp. 23-24 for additional information.

### **Parking Requirements**

Off-street parking is not required in the HC-1 District, however, based on the proposed use and number of anticipated employees the following parking calculation is recommended as a baseline for further discussion with the Owner:

45 employees + 15 interns + 20 Guest/ Participant Parking = **85 stalls.** Further investigation shall be completed prior to design to account for the use of on-street parking, shared personnel, and existing parking on IHMC's campus, which will reduce the number of spaces significantly. Preliminary estimates are that 20 of the referenced 45 employees are already existing on campus personnel.

### ACCESS MANAGEMENT

The site currently has three (3) full access driveways. One to the north, connecting the property to E. Garden Street and two (2) to the east, connecting to S. Alcaniz Street. Access points similar to what currently exists may be beneficial in supporting efficient site circulation and facility management.

### SITE SURVEY

The site survey is available upon request.

### AREA MAP - IHMC CAMPUS





### **DEVELOPMENT REQUIREMENTS**







CURB CUT





**PROPERTY LINE** 



ZONING SEPARATION LINE

BUIDABLE AREA BASED ON C-2A & HC-1

BRICK STRUCTURES, STREETSCAPETYPE 3 REQUIREMENTS

SEE CITY OF PENSACOLA LAND **DEVELOPMENT CODE 12-3-10** (1) FOR ADDITIONAL DEVELOPMENT REQUIREMENTS INCLUDING REVIEW BY THE ARCHITECTURAL REVIEW BOARD

### UTILITY REQUIREMENTS

### SUMMARY

For the laboratory building type designated and program provided, all existing utilities are available at the site in service quantities that appear adequate for the operation of the facility.

### UTILITIES

### **Potable Water**

Potable water service in this area is provided by Emerald Coast Utility Authority (ECUA). According to a review of system maps, there is presently a 12" water main located to the east in front of the subject property on the west side of S. Alcaniz Street.

Fire protection could also be served from the existing water main along S. Alcaniz Street. A backflow preventer for the fire service line and fire department connection (FDC) onboard the parcel will also be required.

### **Sanitary Sewer**

Sanitary sewer service is also provided by ECUA. According to a review of system maps, there is presently an 8" sewer gravity main located to the north on the south side of E. Garden Street. There is also a 24" sewer gravity main located to the east on the east side of S. Alcaniz Street.

### ELECTRIC

Gulf Power is the provider of electric power at the site location and will make adequate power available via overhead service to the location of the pad mounted transformer (Confirm with the Electrical Engineer/Contractor).

### DATA

Architect to coordinate with Cox Communications for service location and connection requirements. The utility provider will typically provide service to

either the property line or the point of entry into the building.

### UTILITY MAP





DISCLAIMER: The Emerald Coast Utilities Authority maps/data are informational records of the approximate location of ECUA Water and/or Sewer Facilities. No representation is made as to its accuracy, and ECUA disclaims any and all liability with respect to any information shown; which may or may not include water and sewer facilities not owned by ECUA. ECUA provides this service for information purposes only and it is not to be used for development of construction plans or any type of engineering services based on information depicted herein. These maps/data are not guaranteed accurate or suitable for any use other than that for which they were gathered. Any use of this information by any other organization for any other purpose and any conclusions drawn from the use of this data is strictly the responsibility of the user.



### STORMWATER MANAGEMENT

### FLOOD ZONE

According to the Federal Emergency Management Agency Flood Insurance Rate Map No. 12033C0390 G effective September 29, 2006 (included herewith), most of the property in question is located in the Special Flood Hazard Area (SFHA) Flood Zone AE (with Base Flood Elevation (BFE) of 7 feet). The remaining portion is located in Flood Zone X (areas determined to be outside the 500-year flood plain).

### SOIL CONDITIONS

According to the USDA Web Soil Survey (included herewith), the primary soils existing on-site are Foxworth Sand. These soils are considered "moderately well drained" and would likely be the suitable for disposal of stormwater on-site through a shallow dry retention pond.

A more thorough geotechnical investigation of the subject site shall be performed prior to civil design to confirm soil types across the site and to obtain detailed recommendations for building foundations, parking areas, and stormwater design.

### STORMWATER MANAGEMENT

Based on GIS data provided by the City of Pensacola, the site is relatively flat but generally slopes from northwest to southeast (see below). This appears to line up with the Flood Map where the higher elevations being located out of any Special Flood Hazard Areas.

Presently, the site has a few shallow linear retention ponds which appear to have served the parcel's previous use. Similar designs for stormwater would likely be used to capture and treat stormwater for the subject project.



BUILDING HAS BEEN DEMOLISHED – FOUNDATIONS MAY BE PRESENT

# National Flood Hazard Layer FIRMette





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# PRELIMINARY SITE ANALYSIS



ისთრიობა მორი დებით: საბალოდ რობდიც, მოიმ კორი სირი (მხძა სიტიის კაბის სახი, ირი მომა მოარი თაც ითინორი (Good) მოკა 1914 ცახოძ ის იუმხი, თი მ 1814 ი. მონიკი დათ., 40 დ. ნიზებანი სირიდებიი მომ სირომთირაი მოდა დარო, წა საბიში

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Basemap: USGS National Map: Ortholmadery: Data refreshed October, 2020

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### SOILS/ GEOTECHNICAL



### SOILS/ GEOTECHNICAL

### MAP LEGEND



Map Unit Legend

### **MAP INFORMATION**

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Escambia County, Florida Survey Area Data: Version 20, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 3, 2020—Feb 28, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Symbo	Map Unit Name	Acres in AOI	Percent of AOI
19	Foxworth sand, 0 to 5 percent slopes	2.0	92.3%
22	Urban land	0.2	7.7%
Totals for Area of Interest		2.1	100.0%

### ARCHAEOLOGY/ ENVIRONMENTAL

### ARCHAEOLOGY

Based on Northwest Florida Water Management District guidelines, it is expected that a Phase 1 Cultural Resources Assessment Survey (CRAS) will be required prior to stormwater permitting.

### ENVIRONMENTAL

A Phase 1 Environmental Site Assessment has been completed for the site. A Phase 2 Environmental Site Assessment is recommended.

IHMC does not have established facilities standards around which future building projects must comply, but the HRPRC may be modeled after the Levin Center in terms of its architectural response, systems, materials, and quality standards. The included budget estimate is based on these materials and systems. Alternate structural, envelope, and mechanical systems will be considered during design of the facility based on market conditions at that time and consultation with the Architect and Construction Manager. The performance criteria described below is intended to summarize the discussions conducted with the Owner and is preliminary in nature. Comprehensive development of all building performance criteria will be completed by the Architect during the subsequent design phase.

### SITE

- 1. Site development shall provide safe and convenient pedestrian movement throughout the IHMC campus, as well as an appropriate response to the historic site with well-developed street edges, sidewalks, landscape, and trees.
- 2. Site approach shall utilize an engineered system of permeable pavers as an integral component of meeting state requirements for stormwater management and minimize flooding.
- 3. Provide a base first floor elevation equivalent to the Levin Center 14'-0" a.s.l.
- 4. Provide site perimeter security fencing with access control for vehicles-generally left open during daylight operational hours.
- 5. Off-street parking quantities to be reviewed with Owner. Refer to Parking Requirements in the Preliminary Site Analysis, p. 14 within this document.
- 6. Provide a covered, secure, and convenient location for 15 bicycles used extensively by staff. Verify quantities with Owner.
- 7. Provide architectural screening consistent with the architectural character of the new building for all major building service equipment including chillers, pumps, and generator.

8. The new facility shall be oriented/ sited such that the front of the building faces Alcaniz Street and is positioned toward the southern end of the property to maintain views of the existing campus from the off-ramp of I-110. This building 'front' may differ from the vehicular drop-off/ participant entry point, which may be internal to the lot.

### BUILDING

- 1. The building may be a 4-story structure (not to exceed 75ft in height) to minimize site impact and maximize architectural impact.
- 2. The building form and massing shall be appropriate to the historic district designation without being duplicative of historic forms. The design solution should create a cohesive campus architectural character, complementing the Levin Center.
- 3. Primary roofing material shall be single ply PVC or TPO with concrete paver walkable surfaces at the rooftop event space.
- 4. Provide a clearly-designated covered entrance for participant drop-off at the main entrance and a designated parking area (although this does not have to be a separate lot). This entrance may be internal to the lot and does not have to be face Alcaniz Street.
- 5. Provide a separate staff entrance that does not appear to be a service entrance i.e. not at the rear of the building or near dumpsters.
- 6. Restroom sizes near public or collaboration areas shall accommodate higher occupant loads above typical code designated requirements. Review capacities with Owner. Provide non-institutional finishes and fixtures.

- 7. Provide one custodial closet per floor and a larger room at the 1<sup>st</sup> floor for storage of maintenance and custodial supplies.
- 8. Provide a site maintenance room at the 1<sup>st</sup> floor or on site for storage materials and equipment.

### SYSTEMS

- 1. Provide a natural gas-powered generator for backup of life safety systems, critical equipment, HVAC, and a dedicated color-coded power circuit. Transition to backup system with no loss in service is critical for some specimens held in the facility. Note that some equipment includes manufacturer-provided UPS (uninterrupted power supply) systems.
- 2. HVAC primary equipment shall be an air-cooled chiller (located at grade) with air handling units (AHUs) servicing functional uses as described below and meeting 2020 Florida Building Code and Florida Energy Code Requirements.
- 3. HVAC distribution shall be a multiple zone variable-air-volume system with terminal reheat. Active chilled beams are a viable option to consider wherever possible to reduce both the amount of air and outside air conditioning for both lab and non-lab areas, although the provided budget estimate is not based on the chilled beam system.
- 4. Provide a single, combined air handling system to serve common areas, offices and meeting rooms, and multipurpose spaces and a separate return air ventilation system.
- 5. Provide a dedicated air handling system for research and Research portions of the building with a 4-6 air change one pass air.
- 6. Provide a single laboratory exhaust system for the research spaces with a high-plume dilution type fan set with 100% redundancy.
- 7. Chemical fume hoods shall be served by a dedicated central exhaust air system system will consist of base-mounted centrifugal exhaust fans connected to a common exhaust fan inlet plenum and located on the roof. The fans are intended to operate in parallel and will each be sized for a fraction of the design load.

- 8. Provide a variable air volume laboratory exhaust system while the system is variable air volume, the exhaust fans operate at constant volume to maintain a constant stack discharge velocity.
- 9. Fume exhaust ducts shall be constructed of stainless steel. Fans and stacks shall have baked Heresite chemical resistant coating on surfaces in contact with air stream.
- 10. Plumbing fixtures in lab spaces shall have a drainage system separate from the sanitary drainage system the laboratory waste system drains by gravity flow to a neutralization basin located exterior to the building. The effluent from the neutralization basin discharges into the site sanitary sewer.
- 11. Laboratory systems shall include potable water, high purity water, lab air, lab vacuum, and lab natural gas. Any special gases will be supplied by localized cylinders.
- 12. Lab spaces shall be provided with dedicated electrical panelboards surface metal raceway and overhead service panels shall be provided around the perimeter and at center island benches for power and data connections. Standby power shall be provided only for specific items as required by program needs.
- 13. Provide a 4500-pound capacity elevator with approximately a 4'x 8' door

  verify loading requirements with Owner during design. Elevator will function as both a service elevator as well as a personnel elevator.
  Locate near public areas with access control for upper two floors.
- 14. Locate the central server room on an upper floor centrally within the building floor plate to limit wire run distances.
- 15. Provide one network closet per floor (typically 1 rack) and stack the network closets per floor if feasible. Data closet HVAC equipment (e.g. ductless mini-split) to be located where condensate will not drip on equipment.
- 16. All exhaust venting (e.g. kitchen, restrooms) shall be located away from mechanical room and laboratory intakes.
- 17. Provide a surveillance and biometric security system to match IHMC campus system by Security Engineering.
- 18. Provide a building lightningprotection system.

- 19. All electrical outlets shall include adjacent data outlets.
- 20. A cathodic protection system is not required.

### INTERIOR SPACE REQUIREMENTS

- Use of premanufactured demising wall systems for all interior non-fire rated partitions is required. The system should be incorporated early in the design process to maximize cost savings. Transparent panels should consider privacy where appropriate – e.g. use of frosted films. It is not anticipated that reconfiguring of walls will occur regularly, although the option is an operational asset. Design and specification of related systems and finishes should follow the recommendations of the manufacturer to optimize efficiency – e.g. electrical distribution, ceiling panel system, flooring, et al.
- 2. Interior walls not utilizing premanufactured wall systems to have Level 5 gypsum wallboard finish.
- 3. Doors to laboratory areas to be 42" wide.