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September 25, 2024

TO: All Interested Prefabricated Modular Manufacturers and Suppliers

FROM: Riki Fujitani
Executive Director, School Facilities Authority

SUBJECT: **Solicitation No. SFA-RFI24-01, Request for Information for Standardization of Prefabricated Construction Specifications for the Hawai'i School Facilities Authority**

The Hawai'i School Facilities Authority (HISFA) issues this Request for Information (RFI) pursuant to Hawai'i Administrative Rules §3-142-202 to seek information and recommendations from interested manufacturers and suppliers regarding the standard specifications and drawings for prefabricated modular buildings.

The written comments in response to the RFI shall be emailed to the program contact person specified within the RFI Contact Person subsection.

The deadline for the receipt of initial comments to subsection **3a** to **3g** is at **12:00 p.m., HST, December 31, 2024**. The deadline for comments on subsection **3h** is at **12:00 p.m. HST, September 30, 2025**. Any responses received after this deadline may not be considered.

Input received in response to this RFI may be incorporated into the specifications and drawings and be used in a formal Request for Proposals (RFP).

SFA-RFI24-01

Participation in this RFI is optional, and responding to any subsequent procurement announcements will not be a prerequisite for future RFPs that include standards derived from the information obtained with this RFI. Neither HISFA nor any interested parties responding have any obligations under this RFI.

1. Introduction

a. The Intent of this RFI

The HISFA plans to implement prefabricated modular and other efficient construction methods for upcoming building projects. This approach is intended to reduce overall construction costs, minimize on-site labor, and expedite project timelines, all while delivering higher-quality results compared to the traditional stick-build process.

At the same time, HISFA is committed to developing comprehensive standards for construction specifications and technical drawings. These standards will ensure that buildings are constructed efficiently and designed for ease of operations and maintenance, a critical consideration given Hawaii's limited availability of local parts and services. By establishing these rigorous standards, HISFA aims to lower the total lifecycle costs of buildings.

b. Goals of the Service

HISFA seeks detailed information regarding the customizations and performance of prefabricated modular, insulated form concrete, and sprung structure building systems. The insights gathered may be used to develop HISFA's comprehensive design and construction standards, which will serve as the foundation for specifications, drawings, and plans in future building construction projects.

In future RFPs, manufacturers selected will be required to fully comply with HISFA's established standards, including selecting approved materials, subcomponents, and performances such as tolerances and energy efficiency.

2. General Requirements

- a. HISFA seeks information from the manufacturers that can provide materials or modules for one of the following construction methods:

1. Volumetric type with metal, mass timber, and other materials
 2. Flat pack type with metal, mass timber, and other materials
 3. Insulated form concrete or similar efficient construction methods
 4. Sprung structures
- b. The participants shall submit information via email in a timely manner. HISFA may request an oral discussion or presentation to support the information.
- c. The participants must have an existing distribution system to provide materials to the islands of O'ahu, Maui, Hawai'i, Kaua'i, Lana'i, and Moloka'i or intend to establish one within two years of the initial response.

3. Information Requested

a. Feasibility, logistics, and distribution

Manufacturers selected under future RFP contracts must supply materials or components to construct school buildings across the islands of O'ahu, Maui, Hawai'i, Kaua'i, Lana'i, and Moloka'i. A detailed logistics plan outlining the distribution of modules or materials to the construction site must be submitted, including transportation methods, expected delivery timelines, and any site-specific considerations.

b. Floorplans and dimensions

If a participant has previous experience providing supplies for school facilities, it shall provide existing floor plans for typical buildings, such as portable classrooms, single-story 4-classrooms, 2-story 8-classrooms, administration, library, and cafeteria. These plans should include exact dimensions, room layouts, and space planning for utilities (e.g., HVAC, plumbing, electrical).

Information on the flexibility of the units should be provided, especially if the units are designed to be combined in various configurations to create larger spaces.

Provide details on the maximum and minimum dimensions allowed based on manufacturing capabilities, transportation logistics, and site constraints (e.g., oversized loads, crane capacity).

c. Material (Metal flat pack, Metal volumetric, Sprung structure)

Provide a detailed list of all materials used in the construction of the modular units, including structural elements (e.g., steel, wood, concrete), insulation, interior finishes, and roofing materials. Specify foundation and grading requirements.

Provide detailed description of the system (Modular, Panelized, Combination) to include level of factory finish and on-site finish required.

Provide any and all advanced materials to be used along with material characteristics and specifications.

Suppliers should provide a detailed list of the mechanical fasteners used to join assemblies, including screws, bolts, nails, and proprietary connectors (e.g., self-tapping screws, hold-downs). Clarify the fastener usage with each construction method (Modular, Panelized, Combination).

Suppliers shall also provide welding requirements, and usage shall be clarified by each construction method (Modular, Panelized, Combination). Specify the amount of factory and on-site welding required.

Clarify whether custom sizes can be produced, including the maximum and minimum dimensions that can be fabricated for unique project requirements. Specify if producing custom dimensions impacts lead times, costs, or manufacturing processes.

Suppliers should detail the maximum span, length, and/or height capabilities for roof and floor framing, columns, and panels. Explain how these dimensions impact the structural design and whether additional support is required for longer spans.

Clarify how panel or framing lengths affect transportation logistics, especially for large-scale projects, and any modular or panelized solutions for joining oversized components on-site.

Suppliers should provide information on the precision and tolerances maintained during the production of prefabricated components. This includes how accurately they can meet specified dimensions and the degree of variation allowed in the finished product.

d. Material (Mass timber flat pack)

Participants should provide a list of the timber species they use in their mass timber components. They could include common species like spruce, pine, fir, larch, Douglas fir, and other regional or specialty woods. Include information on the availability of certified or sustainably sourced timber (e.g., FSC or PEFC certification). List the wood's characteristics, such as density, strength, durability, and resistance to decay.

Provide a detailed list of supported construction types, such as cross-laminated, glue-laminated, dowel-laminated.

Provide the types of preservative treatments available to enhance the durability of mass timber components. They might include pressure treatments, borate treatments, or chemical retardants designed to protect against decay, insects, and moisture.

Provide details on the fire-retardant treatments used to improve the fire resistance of mass timber components, particularly for interior applications. Explain whether treatments are applied during manufacturing or on-site.

If untreated mass timber is an option, suppliers should provide information on its natural durability (e.g., species like cedar or larch that are naturally resistant to decay) and how it performs in different environments.

Suppliers should provide a detailed list of the mechanical fasteners used to join mass timber components, including screws, bolts, nails, and proprietary connectors (e.g., self-tapping screws, timber rivets). Clarify the fasteners compatible with each construction type (CLT, glulam, DLT).

Suppliers should list the standard dimensions they support for each type of mass timber component (e.g., CLT, glulam, DLT). The information should include thicknesses, widths, and lengths typically available for panels, beams, and columns. Provide information on the structural performance of different sizes and thicknesses in terms of load-bearing capacity, deflection, and span limits. Include guidance on how dimensions impact the architectural design, such as room heights and floor spans.

Clarify whether custom sizes can be produced, including the maximum and minimum dimensions that can be fabricated for unique project requirements. Specify if producing custom dimensions impacts lead times, costs, or manufacturing processes.

Suppliers should detail the maximum span and length capabilities for glulam and CLT beams, columns, and panels. Explain how these dimensions impact the structural design and whether additional support is required for longer spans.

Clarify how panel or beam lengths affect transportation logistics, especially for large-scale projects, and any modular solutions for joining longer beams or panels on-site.

Suppliers should provide information on the precision and tolerances maintained during the production of mass timber components. This includes how accurately they can meet specified dimensions and the degree of variation allowed in the finished product.

e. Finish percentages at the factory (Volumetric)

Provide the degree of finish possible at the factory and a brief description of the work required on-site.

f. Subcomponents purchased from a third-party vendor

Provide a list of any subcomponents (e.g., windows, doors, HVAC units, appliances) that are purchased from third-party vendors, including vendor names, locations, and the specific models being used.

g. Standards and performances such as energy efficiency and IAQ

Participants should list all building codes and performance standards that the modular units comply with (e.g., International Building Code, International Energy Conservation Code, ASHRAE standards for HVAC). If the units are designed to meet higher standards, such as CHPS, LEED, ASHRAE Net Zero Energy.

Participants should submit detailed documentation regarding the energy efficiency of the modular units. This includes insulation R-values, roof reflectance, air infiltration rates, HVAC system efficiency, air exchange rate, lighting efficiency, and overall energy consumption (e.g., Site EUI).

Manufacturers should provide documentation on measures taken to ensure good indoor air quality, including the use of low-VOC materials, ventilation systems, and air filtration standards. Indoor air quality testing results or certifications should be included.

Participants should provide accessibility options, including ramps and elevators.

h. Feasibility to customize the design based on suggested dimensions, materials, and subcomponents

HISFA will share proposed standardized plans, dimensions, materials, and sub-components with participants as they become available.

Describe the ability to integrate HISFA's suggested customized layouts with building-wide systems (e.g., plumbing, electrical, HVAC) and how those systems can be adapted to different floorplans without significant redesign.

Describe the ability to use HISFA's suggested materials for structural elements, interior finishes, and roofing.

For HISFA's suggested use of specific subcomponents (e.g., windows, doors, locks, lighting, plugs, appliances, HVAC systems) from third-party vendors, manufacturers should clarify whether they can integrate those custom subcomponents into their prefabrication process.

4. Submission of RFI

If a vendor requires interpretation or clarification of any of the RFI content, contact should be made via the specified contacts only. When submitting questions, vendors shall refer to the specific RFI paragraph number and page number and quote the passage being questioned.

Participants shall include details of their Primary and Secondary Contacts for the RFI (Name, Email, Phone number) in their RFI submission.

Participants shall submit an electronic copy of their RFI response to all RFI points of contact, as outlined below.

Participants are asked to use (Microsoft Office 2016 or later) MS Word, MS Excel, MS PowerPoint, and Adobe Acrobat PDF document formats if they wish to provide further information in a different format.

RFI Submissions shall be clearly marked with RFI Reference:
"RFI_<Solicitation Number> – <Vendor Name>"

5. RFI Contact Person

The individuals listed below are the point of contact from the date of release of this RFI.

Primary contact:

Hawai'i School Facilities Authority
Joji Matsumoto, (415) 237-1661
joji.matsumoto@hisfa.org

Secondary contact:

Hawai'i School Facilities Authority
Brian Canevari, (415) 226-6745
brian.canevari@hisfa.org