



## TERMS OF REFERENCE

### DESIGN AND BUILD FOR THE CONSTRUCTION OF EIGHT (8) STOREY WITH DECK SENIOR HIGH SCHOOL BUILDING AT QUEZON CITY SCIENCE HIGH SCHOOL AT BARANGAY STO. CRISTO

#### I. PROJECT DESCRIPTION

Quezon City Science High School (QCSHS) is the premier science high school of Quezon City and the Regional Science High School for the National Capital Region since 1998. It is mandated to provide “maximum opportunities for science-gifted youth in developing the spirit of inquiry and creativity to sharpen their ability in decision making as they assume their role in the community.”

Established in 1967 and relocated to its current site in Brgy. Sto. Cristo in 1969, QCSHS has since established several buildings and facilities to support its specialized curriculum in science and technology. Following RA 10533 (Enhanced Basic Education Act of 2013), the school implemented its Senior High School program in 2016, catering to Grades 11 and 12, further strengthening its specialization in Science, Technology, Engineering and Mathematics (STEM).

Although student enrolment has been relatively constant, evolving educational standards, technological advancements, and growing emphasis on sustainability have necessitated the modernization of the school’s facilities. The STEM program requires learning spaces that support specialized instruction, research, and experimentation for the development of the city’s future scientists, engineers, and leaders.

Aligned with the Quezon City Government’s (QCG) efforts to improve public educational infrastructure, the Design and Build for the Construction of Eight (8)-Storey with Deck Senior High School Building at QCSHS, replacing Mathay Building A, as the first phase in the implementation of the school’s master redevelopment plan, seeks to enhance the learning environment through modern, functional, and sustainable facilities that meet contemporary standards for science education. The project aims to deliver a medium-rise building equipped with classrooms, laboratories, and ancillary spaces, serving as a model facility for other science high schools in the city and the region.

#### A. OBJECTIVES

The Design and Build of the Eight (8)-Storey with Deck Senior High School Building at Quezon City Science High School shall achieve the following objectives:

- To provide a modern, safe, and conducive learning environment in support of the STEM strand;
- To replace the existing Mathay Building A with a structurally sound and functionally efficient facility compliant with the National Building Code, DepEd and DPWH design guidelines, Accessibility Code, Fire Code and QC Green Building Code;
- To integrate sustainable and resilient design principles into the school’s facilities, ensuring energy efficiency, resource conservation, and long-term adaptability;

- To provide well-designed classrooms, laboratories, and ancillary spaces that encourage research, innovation, and collaborative learning; and
- To deliver a model school building that will serve as a benchmark for future educational infrastructure projects

## B. PURPOSES

The purpose of this project is to design and construct an Eight (8) Storey with Deck Senior High School Building within the QCSHS campus at Barangay Sto. Cristo, replacing Mathay Building A. The new facility shall support the implementation of the STEM strand by providing properly-designed classrooms, laboratories and ancillary spaces that promote research, innovation and collaborative learning.

The project also aims to enhance the overall educational environment by integrating modern, safe, and sustainable design practices that meet current standards for functionality, accessibility, and energy efficiency. By adopting the Design and Build approach, a streamlined and coordinated delivery of both design and construction is ensured, thus, minimizing delays, reducing coordination challenges, and maximizing cost-effectiveness.

Ultimately, this project seeks to create a benchmark educational facility that not only meets the current and future needs of QCSHS students and staff but also sets a standard for other science high school infrastructure projects within Quezon City and the wider National Capital Region, fostering long-term academic excellence, innovation, and positive community impact.

## C. LIMITATIONS/CONSTRAINTS

### 1. Site Restrictions

All construction activities for the Eight (8)-Storey Senior High School Building with Roof Deck shall be confined to the vicinity of the original site of Mathay Building A, and a nearby staging area may be designated subject to the prior written consent of the Quezon City Government (QCG).

### 2. Operational Disruption and Working Hours

QCSHS shall remain operational during the construction phase of the project. Construction activities must therefore be carried out with minimal disruption to ongoing activities and events, while ensuring the protection and safety of all end-users. To avoid disturbances to nearby areas, construction works shall be limited to approved working hours and days, unless otherwise authorized in writing by the QCG.

### 3. Timeframe

The project shall be completed within the specified and approved contract period. Time extensions may be granted under justifiable circumstances and with prior written consent from the QCG.

### 4. Compliance with Standards

All plans and specifications shall comply with relevant standards, including those set by the Department of Education (DepEd), in the design of classroom and laboratory facilities. In addition, all plans, specifications and construction methodologies shall strictly adhere to national building regulations, including but not limited to:

- National Building Code of the Philippines (PD 1096)

- Accessibility Law (BP 344) and its latest IRR
- National Structural Code of the Philippines
- Electrical Engineering Law (RA 7920)
- Plumbing Code (RA 1378)
- Sanitary Engineering Law (RA 1364)
- Code on Sanitation of the Philippines (PD 856)
- 2025 QC Green Building Ordinance and its IRR
- Fire Code of the Philippines (RA 9514)

5. Environmental Impact

All construction activities shall be conducted in a manner that shall minimize environmental impacts. Appropriate and timely mitigation measures must be observed throughout the construction period.

**D. ALLOCATION OF RISKS**

1. Responsibility for Design and Build

The responsibility for both design and construction shall lie solely with the Design and Build Contractor. All outputs, including plans and specifications, shall be subject to the review, approval, and revision of the QCG.

2. Budgetary Constraints

The design and construction costs shall not exceed the Approved Budget for the Contract (ABC). Any costs incurred beyond the ABC shall be borne solely by the Design and Build Contractor.

3. Force Majeure

In the event of force majeure, risks shall be fairly and equitably shared by the Design and Build Contractor and the QCG, taking into account the nature and extent of the impacts.

4. Health, Safety and Security

The Design and Build Contractor shall be solely responsible for the health of its workers, site security and accident prevention. Any negligence and safety violations shall be resolved at the Design and Build Contractor's expense. This responsibility also extends to third-party claims resulting from disputes, damages, or injuries arising from construction-related activities.

**E. DUTIES AND RESPONSIBILITIES OF THE QUEZON CITY GOVERNMENT**

The Design and Build Contractor shall coordinate closely with the designated implementing agencies throughout the project duration. Design supervision shall be undertaken by the City Architect Department (CArD), while implementation supervision and construction management shall be carried out by Quezon City Department of Engineering (QCDE). All works, deliverables, and construction activities shall be subject to their review, monitoring, and compliance requirements. Any directives, corrections, or recommendations issued by these agencies in the exercise of their functions shall be complied with by the Design and Build Contractor at no additional cost to the QCG.

## II. CONCEPTUAL DESIGN

### A. GENERAL IDEA – NAME, LOCATION, BOUNDARIES

The Eight (8) Storey with Deck Senior High School Building is the first phase in the Master Redevelopment Plan of QCSHS. The project aims to replace the three (3) storey Mathay Building A, which has served the institution for nearly 3 decades and is now due for replacement. The project shall cover a building footprint of approximately 630 square meters and shall serve Grades 11 & 12, or the Senior High School (SHS) levels.

The new building, primarily housing seven (7) laboratories and eighteen (18) classrooms, shall embody the principles of green architecture, sustainability and accessibility, among others. The building will be incorporated with passive design strategies, natural lighting and ventilation, and resource conservation, aligning with the QCG's commitment to developing state-of-the-art, essential infrastructure to improve the quality of life of QCitizens and to support long-term sustainable growth through inclusive and quality public education.

### B. SCOPE/PHYSICAL COMPONENTS AND STRUCTURE REQUIREMENTS AND PROPOSED METHODS

The Eight (8) Storey with Deck Senior High School Building must comply with the following minimum requirements:

#### 1. Eighteen (18) Standard-Sized Classrooms

- Dimensions
  - 7.00 m × 9.00 m (measured from center of columns)
- Capacity
  - 40–45 students per classroom
- Environmental Conditions
  - Natural lighting and cross-ventilation provisions
  - Acoustic treatment to minimize inter-room noise
- ICT & Electrical Provisions
  - ICT-ready infrastructure (data outlets, LAN cabling, and adequate electrical provisions)
  - Power and data provisions for LED TV / digital monitor
  - Internet-ready classrooms
- Fixtures & Equipment
  - Ceiling fans
  - LED lighting fixtures
  - Mounting brackets for LED TV / Monitor

#### 2. Three (3) Standard-Sized Laboratories

- Dimensions
  - 7.00 m × 9.00 m each (measured from center of columns)
- Laboratory Types & Requirements
  - a. Robotics Laboratory – electrical outlets, network connectivity, and workspace provisions suitable for programming activities and robotics kits.

- b. Mathematics Laboratory – configured for collaborative, technology-aided instruction with flexible layouts.
- c. Research Laboratory – equipped for experimental and investigative learning, with appropriate storage, work surfaces, and data network connectivity.
- ICT & Display Provisions
  - Power and data provisions for LED TV / digital monitor for each laboratory.
  - Internet-ready laboratories

### 3. Four (4) Double-Sized Laboratories

- Dimensions
  - 7.00 m × 18.00 m each (measured from center of columns)
- Support Spaces
  - Each laboratory shall be provided with an adjunct Control Room and Storage Area to support laboratory operations and equipment management.
- Laboratory Types & Requirements
  - a. Physics Laboratory – with reinforced flooring and utility line provisions suitable for physics apparatus and experimental equipment.
  - b. Chemistry Laboratory – equipped with fume hood, emergency shower, eyewash station, acid-resistant counters, gas lines, chemical-resistant plumbing, and chemical waste disposal lines.
  - c. Earth Science Laboratory – with specimen display systems, testing areas, and work surfaces for geologic and environmental studies.
  - d. Biology Laboratory – with preparation room, sinks, specimen storage, and appropriate utilities for biological investigations.
- ICT & Display Provisions
  - Power and data provisions for LED TV / digital monitor for each laboratory.
  - Internet-ready laboratories

### 4. Vertical Circulation

- Elevators
  - Provision of two (2) passenger elevators, each with a minimum capacity of 10 persons.
  - Elevators shall be fully compliant with BP 344 and the Accessibility Code.
- Staircases
  - Sufficient staircases shall be provided to ensure safe fire egress and regular access.
  - Staircases shall be located and designed in accordance with the Fire Code of the Philippines.

### 5. Comfort Rooms

- Distribution
  - Comfort rooms shall be appropriately distributed on each floor, with separate facilities for male, female, and gender-neutral and/or PWD toilets

- Design & Finishes
  - Comfort rooms shall be designed with adequate ventilation, water-saving fixtures, and durable, easy-to-maintain finishes.

## 6. Utility Rooms and Building Systems

- Inverter Room
- Main Electrical Room
- Pump Room
- CCTV / Telecom Room / PABX
- Rain Water Collector Room
- Solar Panel System
  - Available roof and deck space shall be utilized for maximum allowable photovoltaic (PV) installation
  - System capacity shall be based on total building electrical load requirements, with significant contribution to overall energy demand
  - Provision of hybrid solar PV system with battery storage sized for a minimum of two (2) days of autonomy
  - Provision of dedicated rooms for battery storage and inverter system, compliant with applicable safety and ventilation requirements
- Generator House
- Building Management System (BMS)
  - Provision of centralized BMS to monitor and control building utilities including, but not limited to all utilities (FDAS, electrical systems, lighting, etc.)

## I. CONCEPTUAL PHASE

All prospective bidders are required to submit a Conceptual Design as part of their Technical Proposal, based on the project's location in the QCSHS Master Redevelopment Plan, and on specifications set in this TOR. The Preliminary Conceptual Design shall include, but not limited to, the following:

- Site Development Plan
- Proposed Floor Plan / Layout
- Exterior Perspectives and Reference Images
- Levels Plan
- Circulation Diagram
- Conceptual Lighting Plan including images of lighting fixtures
- Materials Plan including images of materials/finishes
- Submission of Proposed Work Plan Methodology and Preliminary Inspection Findings

## II. RESEARCH AND DETAILED DESIGN

The winning bidder, hereinafter referred to as the Design and Build Contractor, shall submit Research and Detailed Design documents for the approval of QCG in **TWENTY (20) Calendar Days reckoned seven (7) Calendar Days** from the issuance of Notice to Proceed (NTP). The Design and Build Contractor shall prepare the design based on schemes and specifications approved by the QCG. The Research and Detailed Design shall include, but not limited to, the following:

- A. Research, site surveys and investigations for needed data on the locations, dimensions, elevations and other pertinent data on:
  1. Site Analysis and Technical Investigations, including:
    - a. Topographic Survey – to map elevation levels and landform contours
    - b. Site Investigation – to examine existing site conditions, utilities, access and surrounding land use
    - c. Soils and Foundation Investigation – to assess soil stability, bearing capacity and substructure recommendations
  2. Existing utility lines (electricity, water and telecommunication)
  3. Road levels and elevations
  4. Drainage line
  5. Existing trees/vegetation
  6. Existing structures
- B. Detailed Design Plan and Program of Works to be submitted for the approval of the QCG
  1. Complete Architectural and Engineering Drawings that shall include but not limited to:
    - Site Development and Layout Plan
      - Illustrates the lot boundaries, proposed and existing structures, access points, landscaping, site circulation, setback and easement requirements, and topographic contour lines, as needed
    - Floor Plan/s
    - Civil / Structural Plans
    - Mechanical Plans
      - The Mechanical Design shall cover the complete planning, analysis, and preparation of drawings and specifications for:
        - Air Conditioning System (HVAC)
        - Mechanical Ventilation System
        - Elevator / Vertical Transport System
      - All designs shall:
        - Comply with the National Building Code (PD 1096), Fire Code (RA 9514), Accessibility Law (BP 344), and QC Green Building Ordinance
        - Follow applicable international standards (ASHRAE, SMACNA, NFPA)
        - Incorporate energy-efficient and sustainable design principles
        - Include complete engineering calculations, equipment sizing, and system layouts
    - Electronics and Communication Engineering Plans
      - Outlines the design and layout of CCTV / Telecom and PABX lines
      - Includes design and integration of Building Management System (BMS), covering monitoring and control of all major building utilities

- Electrical Plans
    - Outlines power distribution, emergency power systems (generator, UPS), lighting, receptacles and other electrical components necessary for building to operate safely and efficiently. The design must be future-proof in consideration with future technologies and needs.
  - Plumbing and Storm Layout Plans
    - Outlines the design and layout of plumbing and storm drainage system that shall ensure hygienic conditions of the facility and maintain public health and safety.
  - Fire Protection System Plans
    - The Fire Protection System Design shall include complete planning, analysis, and preparation of drawings and specifications for:
      - Automatic Fire Suppression System
      - Fire Detection and Alarm System (FDAS)
      - Standpipe and Hose Reel System
      - Fire Pump System
      - Smoke Control System
    - All systems shall:
      - Comply with the Fire Code of the Philippines (RA 9514) and its IRR
      - Conform to applicable NFPA Standards (e.g., NFPA 13, 14, 20, 72, 92)
      - Be UL/FM approved (where applicable)
      - Ensure life safety, property protection, and system reliability
  - Cross Sections
    - Offers detailed sectional views through the facility to illustrate internal components
  - Rendered perspectives
  - Demolition plan for existing structure/s:
    - Mathay Building A
    - Cooperative Canteen
2. Detailed Engineering Deliverables and Activities
- General Notes and Technical Specifications describing the type and quality of materials and equipment to be used
  - Structural Analysis Report
  - Detailed Cost Estimates, Detailed Bill of Quantities, with corresponding Detailed Unit Price Analysis (DUPA), a summary sheet indicating the unit price of construction materials, labor rates and equipment rentals
  - Detailed Program of Work (POW)
  - Construction Schedule (Bar Chart with Milestones)
  - PERT-CPM Diagram and Quality Control Plan
  - Comprehensive Design Report
  - Manpower Utilization Schedule
  - Equipment Utilization Schedule
  - Electrical Computation including lighting analysis/computation in compliance with the Quezon City Green Building Ordinance

- Mechanical Computation in compliance with the Quezon City Green Building Ordinance
- Geotechnical Report

The Design and Build Contractor shall be fully responsible for the accuracy and applicability of all data to be used in its Design and Build proposal and services. Thus, it shall be the responsibility of the Design and Build Contractor to validate preliminary investigations and information on soil, geotechnical, hydraulic, seismic, traffic and environmental conditions, as needed, to define project design criteria. They shall likewise conduct validation on existing utilities and service lines in and around the project area, thus, ensuring the accuracy of all information used in design development.

The Design and Build Contractor shall consider the following criteria in preparing the design:

- Application of current technology and industry trends in the design of school facilities, particularly Science High School buildings
- Ensure the safety and security of all end-users at all times, including provisions for non-slip surfaces and clear signage
- Zoning of spaces and efficient circulation
- Maintenance and life cycle cost considerations

The Design and Build Contractor shall submit **seven (7) copies of the research and plans in A4-size paper and in 20 x 30 white print, ring-bound and five (5) electronic copies in flash drive**, for the approval of the QCG, who may also provide comments and suggestions, which the Design and Build Contractor shall address and incorporate into the revised submission, as necessary.

An approval period of **FIVE (5) Calendar Days** upon receipt of the Research and Detailed Design Plans shall be allotted for review by the QCG. Should revisions be required, another **FIVE (5) Calendar Days** shall be allotted to the Design and Build Contractor to incorporate the necessary changes and resubmit the documents accordingly to QCG.

### III. IMPLEMENTATION PHASE

The Design and Build Contractor shall perform the following, but not limited to, construction works in **SEVEN HUNDRED TWENTY (720) Calendar Days** immediately after the QCG's approval of the Research and Design components:

- i. Supply labor, material, equipment and other requirements deemed necessary for the construction and implementation of the project.
- ii. Obtain all necessary information as to risks, contingencies and other circumstances which may affect the works. They shall prepare and submit all necessary documents specified by the QCG to meet all regulatory approvals specified in the contract documents.
- iii. Execute the construction activities to complete the project in accordance with the approved architectural and engineering designs, construction drawings and specifications in the highest degree of workmanship, integrity and professionalism.

- iv. Secure compliance of the requirements of R.A No. 11058 or the Occupational Safety and Health Hazards Law, and its Implementing Rules and Regulations, and Department of Labor and Employment (DOLE) Department Order 198-18, specifically the Basic Components and Company Occupational Safety and Health (OSH) Program and Policy (DO 198, Chapter IV, Section 12).
- v. Prepare semi-monthly and monthly accomplishment reports supported by progress photographs and S-curve to monitor performance as basis for progress billing.
- vi. Ensure that the quality of materials to be furnished or works to be done shall be in accordance with the approved specifications. However, if specified materials are not available, the Design and Build Contractor shall immediately propose, in writing, acceptable alternatives to the QCG.
- vii. Test the materials they will use on the project, such as, but not limited to, fine aggregates, coarse aggregates, cement, concrete, reinforced steel bar, among others, and provide the QCG a copy of the Material Testing Results.
- viii. Comply with pertinent regulations and adopt safety measures, such as but not limited to, enclosures, shielding, covering, warning devices, off limits signs, etc.
- ix. Coordinate and comply with the authorized representatives from the QCG who may, at any time, inspect the progress of the project and may issue a stoppage when the integrity, security and safety of the site and structures around the site is compromised.
- x. Carry out their duties and responsibilities as expeditiously as possible and shall begin, perform and complete their services so that the work progresses in accordance with the construction schedule and is finally completed by the date of final completion.
- xi. Coordinate during the final inspection and use of the project, which will be conducted in the presence of authorized representatives of the QCG.

As a rule, contract implementation guidelines for procurement of infrastructure projects shall comply with the guidelines for the implementation of contracts for DESIGN AND BUILD infrastructure projects, and the following provisions shall supplement these procedures:

- i. No works shall commence unless the Design and Build Contractor has submitted the required documentary requirements to the QCG and has secured approval.
- ii. The Design and Build Contractor shall submit a detailed program of works within **FOURTEEN (14) Calendar Days after the issuance of the Notice to Proceed** for approval of the QCG that shall include, among others:
  - The order in which it intends to carry out the work including anticipated timing for each stage of design/detailed engineering and construction;
  - Periods for review of specific outputs and any other submissions and approvals;
  - Sequence of timing for inspections and tests as specified in the contract documents;
  - General description of the design and construction methods to be adopted;

- Number and names of personnel to be assigned for each stage of the work;
  - List of equipment required on site for each major stage of the work; and
  - Description of the quality control system to be utilized for the project.
- iii. Any errors, omissions, inconsistencies, inadequacies or failure submitted by the Design and Build Contractor that do not comply with the requirements shall be rectified, resubmitted and reviewed at the Design and Build Contractor's cost. If the Design and Build Contractor wish to modify a design or document which has been previously submitted, reviewed and approved, it shall notify the QCG within a reasonable period of time, and shall shoulder the cost of such changes.
- iv. Changes in design and construction requirements shall be limited only to those that have not been anticipated in the contract documents prior to contract signing and approval. The following shall govern approval for change orders:
- Change Orders resulting from design errors, omissions or non-conformance with the performance specifications and parameters and the contract documents by the Design and Build Contractor shall be implemented by them at no additional cost to the QCG.
  - Provided that the Design and Build Contractor suffer delay and/or incurs costs due to changes or errors in the QCG's performance specifications and parameters, it shall be entitled to an extension of time for any such delays under Section 71.1.3 of the IRR of RA 12009;
- v. The contract documents shall include the manner and schedule of payment specifying the estimated contract amount and installments in which the contract price will be paid.
- vi. The Design and Build Contractor shall be entitled to advance payment subject to the provisions of Section 71.1.5 of the IRR of RA 12009.
- vii. The QCG shall define the quality control procedures for the design and construction in accordance with agency guidelines and shall issue the proper certificates for acceptance for sections of the works or the whole of the works as provided for in the contract documents.
- viii. The Design and Build Contractor shall provide all necessary equipment, personnel, instruments, documents and others to carry out specified tests.
- ix. All Design and Build projects shall have a minimum Defects Liability Period of one (1) year after contract completion or as provided for in the contract documents. This is without prejudice, however, to the liabilities imposed upon the engineer/architect who drew up the plans and specification for a building sanctioned under Article 1723 of the New Civil Code of the Philippines.
- x. The Design and Build Contractor shall be held liable for design and structural defects and/or failure of the completed project within the warranty periods specified in Section 90 of the IRR of RA 12009.

#### IV. POST-IMPLEMENTATION PHASE

The Design and Build Contractor shall submit within **TEN (10) Calendar days** from the completion of the project the following documents:

- a. As-built plans, three (3) copies in 20 x 30 white print, ring bound, and three (3) electronic copies in flash drive
- b. Training and Operations Guidelines
- c. Acceptance of Project by the QCG

Phase	No. of Calendar Days	Responsible Party
SUBMISSION OF CONCEPTUAL DESIGN AS PART OF TECHNICAL PROPOSAL		Design and Build Contractor
CONCEPTUAL DESIGN PLANS REVIEW	<b>Five (5) CD</b>	QC Government
RESEARCH AND DETAILED DESIGN DEVELOPMENT, INCLUDING PROGRAM OF WORKS	<b>Twenty (20) CD</b> reckoned 7 Days after issuance of Notice to Proceed	Design and Build Contractor
APPROVAL OF DETAILED DESIGN DEVELOPMENT PLANS	<b>Five (5) CD</b> upon receipt of Research and Detailed Design Plans	QC Government
REVISION AND RESUBMISSION OF DETAILED DESIGN DEVELOPMENT PLANS, IF NECESSARY	<b>Five (5) CD</b> upon receipt of recommendations from QCG	Design and Build Contractor
PROJECT IMPLEMENTATION	<b>Seven-Hundred Twenty (720) CD</b> upon approval of Detailed Design Plans	Design and Build Contractor
POST-IMPLEMENTATION, SUBMISSION OF AS-BUILT PLANS	<b>Ten (10) CD</b> upon project completion	Design and Build Contractor
<b>TOTAL NO. OF CALENDAR DAYS</b>	<b>SEVEN-HUNDRED AND SIXTY-FIVE (765) CALENDAR DAYS</b>	

### III. PERFORMANCE SPECIFICATIONS AND PARAMETERS

The Design and Build Contractor shall ensure that the design and construction of the Eight (8) Storey with Deck Senior High School Building shall meet the minimum performance specifications and parameters herein set forth.

#### A. DESIGN AND CONSTRUCTION STANDARDS, LEGAL AND TECHNICAL OBLIGATIONS

##### 1. Design Parameters

- Eighteen (18) Standard-Sized Classrooms
  - Each classroom shall measure 7.00 meters by 9.00 meters, measured from the center of columns.
  - Designed to accommodate an average of 40–45 students, with provisions for natural lighting and cross ventilation.
  - Classrooms shall be equipped with provisions for ICT integration, ceiling fans, lighting, and adequate acoustic treatment.
  - Internet-ready classrooms
- Three (3) Standard-Sized Laboratories (7.00 m × 9.00 m each)
  - Robotics Laboratory – with provisions for electrical outlets and network connectivity for programming and robotics kits.