

TOWN OF WINDSOR

REQUEST FOR QUALIFICATIONS & FEE PROPOSAL FOR DESIGN OF ENGINEERING FOR SLAB MOISTURE MITIGATION

**SAGE PARK MIDDLE SCHOOL
25 SAGE PARK ROAD
WINDSOR, CT 06095**

Proposals Due: TUESDAY NOVEMBER 22, 2022 by 11:00 a.m.

**Finance Office
Attn: James Bourke
Windsor Town Hall
Finance Department
Second Floor
275 Broad Street
Windsor, CT 06095**

**TOWN OF WINDSOR
SLAB MOISTURE MITIGATION & ENGINEERING EVALUATION
DESIGN CONSTRUCTION DRAWINGS**

**THIS IS A REQUEST FOR BIDS AND THE TOWN RESERVES THE RIGHT TO
NEGOTIATE AND CONTRACT WITH ANYONE OR NO ONE IN THE BEST
INTERESTS OF THE TOWN OF WINDSOR.**

WEDNESDAY OCTOBER 26,2022

INTENT AND GENERAL INFORMATION

The Town of Windsor solicits proposals from qualified consulting Architect Engineering firms to provide design services for the SLAB moisture mitigation repairs and improvements to SAGE PARK MIDDLE SCHOOL 25 SAGE PARK ROAD in Windsor, CT. 06095

The SCOPE OF WORK of this project is to address; EVALUATE EXISTING SLAB MOISTURE REPORTED ISSUES TO SECTIONS of the 1994 ADDITION SLAB FLOORING OF THE BUILDING.

All work performed under the contract between the Town of Windsor and the firm selected who shall be a professional Architect Engineering firm licensed by the State of Connecticut.

SUBMISSION AND DEADLINE

The respondent shall submit eight (8) sets of their proposal c/o:

**James Bourke
Director of Finance
Windsor T own Hall
275 Broad Street
Windsor, CT 06095**

Bids will be received at the Finance Department Second Floor Windsor Town Hall until Tuesday November 22, 2022 11:00 AM at which time they will opened in the Town Hall, Room TBD, and publicly read aloud. Results will be posted on town web site later that day.

The Windsor Public Building Commission has full responsibilities for Windsor regarding this project.

Contact Whit Przech at 860-285-1870 with any questions and to schedule any site visits.

**Whit Przech
Building and Facilities Manager
Town Hall
275 Broad Street
Windsor, CT 06095**

SCOPE OF SERVICES

The effected slab areas are located in the 1994 addition of 59,885 sq. ft. to this building. Issues are; water seeping up through the slab, compromised vct flooring adhesion, Gymnasium wood flooring buckling, odors and safety concerns for students and staff.

The selected Architect Engineer will provide comprehensive architectural and engineering services for the existing moisture issues and the design of resolution(s) to these moisture in slab issues. Submit a itemized fee proposal for the following services;

1. Slab moisture Investigation Testing Monitoring Fee.
2. Schematic Conceptual Design Drawings Specifications Phase Fee.
3. Upon Approval of Line (two) 2. Final Construction Drawings Specifications Fee.
4. Bids Review with town Staff Fee.
5. Construction Administration Fee.
6. All Project As-Builts All Project Documents Closeout Fee.

The awarded architect engineering firm will work closely with Board of Education and town staff to define a finite scope of work.

The selected architectural engineering firm must have sufficient staff to assure prompt delivery of services and completion of assigned tasks. The selected architect must possess a Professional Engineer licensed by the State of Connecticut to be responsible for the management and design.

SELECTION CRITERIA

The Architect Engineering firm may be selected and / or interviewed by the Windsor Public Building Commission on the basis of the following:

- Experience and knowledge with the design of similar moisture mitigation projects.
- Displayed understanding of this project's required scope of work.
- Design and Administration approach to the project requirements.
- Experience with design build single point of responsibility is a consideration
- Previous experience with Windsor Public Building Commission Projects.
- All Firms submitted fee(s) for design and administrative services cost.
- Lump sum price on enclosed bid form with signed Non-Collusion form.
- Awarded firm will attend Monthly PBC meetings to update Commissioners on Project Progress. Review approve all contractor payments any Change Orders for submission to the PBC.

TERMS AND CONDITIONS

Unless otherwise modified, the following Terms and Conditions will apply to an agreement which may result from this process. The Architect Engineer may use a standard AIA form of agreement incorporating the following provisions.

Services to be Provided

The Architect shall provide services as set forth in the RFP proposal and in accordance with the terms identified herein. The services provided will be performed on behalf of and solely for the Town of Windsor and any information, tests, reports, correspondence, and conclusions shall not be released to other parties unless authorized by the Town of Windsor or in accordance with any applicable state or federal law.

Billing and Payment

The Town of Windsor will pay the Architect for services performed in accordance with a signed Agreement. Invoices will be submitted periodically or upon completion of services rendered. The Town reserves the right to request substantiating information on any bill submitted. The Town will, within 30 days after receipt of an invoice requesting payment and review and approval by the Windsor Public Building Commission (PBC), either indicate the approval of payment and process the invoice or indicate to the Architect in writing, the reason for refusing to approve said invoice. In the latter case, the Architect will make the necessary corrections and resubmit the invoice. The Town will, within 30 days of an approved invoice, pay the amount to the Architect.

Court Litigation and Waiver of Jury Trial

Notwithstanding the existence of any provision for arbitration of disputes in the contract or any legislation providing for arbitration, any dispute arising under this contract shall not be submitted to arbitration and the parties shall be left to the remedies at law. It is further expressly agreed that both parties waive and relinquish their right to a trial by jury of any dispute arising out of this contract. The intent of the parties is not to have a jury decide any aspect of any dispute which may arise under this contract.

Equitable Relief

Nothing herein shall prevent either party from obtaining a court order enforcing the mediation process or such other temporary or equitable relief until such time that the dispute is settled or finally adjudicated.

Insurance

The Architect shall, after being awarded the Contract but prior to starting work, furnish Certificates of Insurance, including Automobile, Commercial General Liability, Professional Liability, Umbrella Liability, and Worker's Compensation insurance in the following amounts:

1. Commercial General Liability Insurance:

The Architect shall provide Commercial General Liability insurance with a combined single limit of \$1,000,000 per occurrence, \$1,000,000 aggregate for bodily injury and property damage.

The CGL shall be written on ISO occurrence form CG 00 01 10 93 (or a substitute form providing equivalent coverage) and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract)

2. Commercial Automobile Liability Insurance

The Architect shall provide Commercial Automobile Liability insurance with a combined single limit of \$1,000,000 per occurrence, \$1,000,000 aggregate, and shall include coverage for all owned, hired, and non-owned vehicles.

3. Worker's Compensation Insurance

The Architect shall provide Worker's Compensation Insurance in the required amount as applies to the State of Connecticut and Employers Liability Insurance as follows:

- Bodily Injury by Accident - \$100,000 each accident
- Bodily Injury by Disease - \$500,000 policy limit
- Bodily Injury by Disease - \$100,000 each employee

4. Umbrella Liability Insurance

The Architect shall provide Commercial Umbrella Liability insurance with a combined single limit of \$1,000,000 per occurrence, \$1,000,000 aggregate for bodily injury and property damage.

5. Professional Liability Insurance

The Architect shall provide Professional Liability insurance with a combined single limit of \$1,000,000 per occurrence, \$1,000,000 aggregate for bodily injury and property damage.

Each Policy of Insurance shall include a waiver of subrogation in favor of the Town of Windsor and shall provide no less than thirty- (30) days' notice to the Town of Windsor in the event of a cancellation or change in conditions or amounts of coverage. The

Commercial General Liability, Automobile, and Umbrella Liability shall name the Town of Windsor as an additional insured.

Certificates of Insurance, acceptable to the Town of Windsor shall be delivered to the Town of Windsor prior to the commencement of the work and kept in force throughout the term hereof.

The above insurance requirements shall also apply to all Sub-consultants and the Architect shall not allow any Sub-consultants to commence work until the Sub-consultants insurance has been so obtained and approved.

USE OF ARCHITECTS DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS

The paper or electronic drawings, specifications and other documents prepared by the Architect for this Project shall be the joint property of the owner and the Architect, provided, however, the rights of ownership shall be limited as follows:

The Owner shall have the unlimited right to submit or distribute documents to meet official regulatory requirements or for similar purposes in connection with the project.

FORM OF NON-COLLUSIVE AFFIDAVIT

**DESIGN OF ENGINEERING FOR SLAB MOISTURE MITIGATION
SAGE PARK MIDDLE SCHOOL**

State of _____

County of _____

_____, being first duly sworn, deposes and says:

That he/she is, _____ the party making the foregoing proposal for bid, that such proposal or bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any bidder or person, to put in a sham bid or to refrain from bidding, and has not, in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price or affiant or of any other bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any other bidder, or to secure any advantage against the Town of Windsor, State of Connecticut, or any person interested in the proposed contract, and that all statements in said proposal for bid are true.

Signature (Signature should be notarized)

Printed Name and Title

Name of Company/Corporation

Date

Personally appeared _____, and acknowledged the same to be his free act and deed as such _____, and the free act and deed of said corporation before me.

In Witness Whereof, I hereunto set me hand and seal.

Notary Public
My Commission Expires

BID FORM

**REQUEST FOR QUALIFICATIONS & FEE PROPOSAL
DESIGN OF ENGINEERING FOR SLAB MOISTURE MITIGATION
SAGE PARK MIDDLE SCHOOL
25 SAGE PARK ROAD
WINDSOR, CT. 06095**

**To: Mr. James Bourke, Director of Finance
Town of Windsor
275 Broad Street
Windsor, CT 06095**

Pursuant to and in compliance with your "Request for Proposals" relating thereto, the undersigned,

(Name of Firm)

Having visited the site and carefully examined existing conditions and RFQ/RFP documents received prior to the scheduled closing time for recipient of Bids to the Town of Windsor, 275 Broad Street Windsor, Ct 06095, hereby agrees as follows:

For design services for the;

**DESIGN OF ENGINEERING FOR SLAB MOISTURE MITIGATION TO SAGE
PARK MIDDLE SCHOOL 25 SAGE PARK ROAD in Windsor, CT. 06095**

If awarded this contract, Windsor Public Building Commission will execute an AIA contract with the awarded Architectural Firm.

Signed Non-Collusion form attached _____

ITEMIZED FEE LIST

- 1. Slab moisture Investigation Testing Monitoring Fee. _____
- 2. Schematic Conceptual Design Drawings Specifications Phase Fee. _____
- 3. Upon Approval of Line (two) 2. Final Construction Drawings Specifications Fee. _____
- 4. Bids Review with town Staff Fee. _____
- 5. Construction Administration Fee. _____
- 6. All Project As-Builts All Project Documents Closeout Fee. _____

TOTAL PROPOSAL LUMP SUM COST FOR ALL FEES LISTED IN THIS RFQ;

(written) _____ (\$ _____)



FUSS & O'NEILL

September 23, 2021

Mr. Chuck Waterfield
Physical Plant Manger
Windsor Public Schools
601 Matianuck Ave.
Windsor, CT 06095

RE: Slab Moisture Investigation
Sage Park Middle School, 25 Sage Park Road, Windsor, CT
Fuss & O'Neill Reference No. 20160987.A60

Dear Mr. Waterfield:

Fuss & O'Neill, Inc. (F&O) has completed our evaluation of the existing concrete slab-on-grade at the Sage Park Middle School in Windsor, CT. The 178,000 square-foot school was originally constructed in 1972 and has subsequently undergone several renovations and additions. While F&O has not conducted an independent evaluation of the property, it appears to be located in an area with a presumed high groundwater table. The purpose of this evaluation was to investigate the as-built condition of the first-floor slab and test the concrete for compressive strength and relative humidity. It is our understanding that the existing finishes for portions of the 1st floor of the building have repeatedly had issues remaining adhered to the concrete slab-on-grade and have been replaced in the past without success. Additionally, a moisture barrier was applied on the top side of the slab and did not prevent moisture from impacting the flooring.

The purpose of this investigation was to determine the as built condition of the existing concrete slab-on-grade and perform compressive and relative humidity tests to determine its strength and moisture content. Based on the results of this testing, as presented below, we have developed recommendations for next steps to address the moisture problem.

It is our understanding that most of the areas of concern were part of a significant renovation/addition that occurred in 1992. F&O was able to review select original design drawings from this work and it appears that the concrete slab-on-grade was intended to be 4 inches thick with 4 inches of compacted base material below and a 6 mil vapor barrier below the base material. The original slab design for the gym was not available for our review.

F&O performed a site visit on August 17, 2021 with Independent Materials Testing Lab (IMTL) to review the condition of the existing concrete slab-on-grade, extract cores for compressive strength testing, and install relative humidity sensors. IMTL returned to the site 24 hours after this initial site visit to record the relative humidity levels at each location and remove the sensors. Three rooms were selected for compressive strength testing and six rooms were selected for installing the

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Mr. Chuck Waterfield
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relative humidity sensors as indicated in the table below. Generally, the exposed sections of the cast-in-place concrete slab appear to be in good condition with no obvious indications of deterioration or structural distress. We did note that the slab, in some locations, does appear to be damp; however, no evidence of vapor or water was observed.

Results

The results for each room are summarized in the table below.

Room	Slab Depth (in)	Compressive Strength (psi)	Relative Humidity (%)
GYM	4.5	6,010	99
110	3.0	5,190	99
111	-	-	99
115	-	-	99
117	-	-	99
118	3.0	6,820	99

The results of the testing indicate that the as-built concrete slab-on-grade for the rooms that were part of the 1992 addition and renovation does not comply with the minimum design thickness of 4 inches. Our visual observations indicated that there is base material below the slab; however, its thickness and the presence of a vapor barrier below it could not be verified.

Discussion

While there isn't a maximum value for relative humidity (RH) in a concrete slab-on-grade, the conditions noted previously (repeated detachment of floor coverings and localized buckling of the gym floor) are more likely to occur at higher RH values. Many flooring manufacturers will limit the RH in a concrete slab to 75% to 80% in order for their flooring material and its adhesive to properly bond to the slab. The results of the RH tests conducted as part of this evaluation are much higher than this threshold and are likely the main contributing factor in the flooring's repeated failure to successfully adhere to the concrete slab. The higher RH values could be attributed to the high groundwater table.

Based on the results of this analysis, it is very likely that the pre-existing high groundwater table as well as the variance in the as-built concrete slab thickness with respect to its intended design are contributing factors to the measured RH values. It does not appear that the RH of the slab has affected its structural performance or durability. It is possible that the vapor barrier below the base material that is directly below the concrete slab has either failed, was installed incorrectly (or not at all), or is not sufficient given the high groundwater table. It is likely that the vapor barrier and the additional thickness of the concrete slab are helping to keep the RH of the slab from exceeding the



Mr. Chuck Waterfield

September 23, 2021

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values observed during this evaluation. Generally, a 6-inch to 8-inch thick layer of course, free draining gravel or crushed stone below the slab is recommended under high ground water conditions to create a capillary break and minimize the effect of hydrostatic pressure and the ingress of water. The design drawings called for 4 inches of compacted slab base course which may or may not be sufficient.

Other factors that may contribute to the migration of groundwater into a concrete slab-on-grade include the seams/overlaps between adjacent sections of the vapor barrier, the water-to-cement ratio of the as-built concrete slab-on-grade, the presence of water reducing and/or waterproofing admixtures in the concrete mix, and the conditions under which the slab was cured. These factors could not be investigated based on the information available to F&O at the time of this investigation.

Recommendations

Based on the results of the concrete tests, our review of the original design drawings, and our observations of the as-built construction, it is clear that the high groundwater table is having a significant effect on relative humidity and moisture content of the existing concrete slab-on-grade. These conditions have led to the floor finishes failing to adhere to the slab. Managing the high groundwater elevation is a significant undertaking that will likely involve invasive and costly measures. Potential options to mitigate the high groundwater table include the following:

- Installing a raised flooring system above the current finished floor that prevents the moisture from getting to the new, higher top of slab elevation.
- Installing a new drainage system below the current slab-on-grade that collects groundwater before it reaches the slab and directs it outside the footprint of the existing building.
- Installing a groundwater reduction system (typically by means of mechanical pumping) to lower the natural groundwater elevation in the immediate area surrounding the building.

We do not recommend coating the existing slab with a liquid applied vapor or moisture barrier and installing new flooring as the some observed conditions are likely to repeat over time.



FUSS & O'NEILL

Mr. Chuck Waterfield
September 23, 2021
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Please contact us with any questions or concerns regarding the investigation and test results for the concrete slab-on-grade at the Sage Park Middle School in Windsor, CT.

Sincerely,

Jason J. LeDoux, P.E.
Senior Project Manager

Enclosures: Photos
 Test Reports

Sage Park Middle School – Slab Investigation



Photo 1: Gym Floor Test Area



Photo 2: Typical Classroom Test Area



Accurate information you can rely on.

Concrete Coring Report

Client: Fuss & O'Neill, Inc. Project No.: 5185
 Project: Sage Park Middle School Report No.: 002
 Date Concrete Placed: Unknown Report Date: 08/25/2021
 Revised: 09/08/2021**
 Date Core Obtained: 08/17/2021 Lab Time / Date Placed in: 10:10 am
 Cored by Whom: Spencer Roy Sealed Bags: 08/20/2021
 LOCATION: Rooms, 110, 118, Gym Date Cores Tested: 08/25/2021
 Lab Technician: Jason Norton Time Cores Tested: 8:30 am
 Date of Capping: 8/23/2021 Age of Concrete at Testing: Unknown

Core ID	Lab No	Length as Drilled	Time Drilled/Placed in Bag	Sawed Length (in)	Capped Length (in)	Dia. (in)	Wt. (lbs)	Density (lbs / ft ³)	Area, Sq. Inches	Failure Load (lbs)	Comp. Strength (psi)	Corrected Strength (psi)	Break Type
Gym	387488	4.5	1:30 pm	4.50	4.75	3.92	4.70	150.3	12.01	72190	6010	5530	S2
Rm 110	387489	3.0	2:00 pm	2.90	3.20	2.88	1.52	139.0	6.51	33781	5190	4650	S2
Rm 118	387490	3.0	2:15 pm	2.95	3.25	2.87	1.60	144.9*	6.47	44120	6820	6140	S2
Average Core Diameter*						3.22							

Nominal Maximum Aggregate Size: 3/4"

Load applied to horizontal plane of concrete as placed for slab coring of concrete as placed for wall coring.

Unless Stated Otherwise: 1. Cores tested in accordance with ASTM C-42. 2. Cores fractured normally.
 3. Cores were free of obvious defects. 4. Wet prep used to cut core ends.

Test Method Exceptions: If core dia. less than 3.7" state reason: Four inch cores.

Cores	Correction Factors Used
387488	1.21 / .920
387489	1.11 / .896
387490	1.13 / .901

**Report Revision: Updated Density for Core Id Rm 118



pc: Jason LeDoux, P.E., Fuss & O'Neill, Inc.
 km

Independent Materials Testing Laboratories, Inc. T 860.747.1000 mail@imtlct.com
 57 N. Washington St., P.O. Box 745, Plainville, CT 06062 F 860.747.6455 www.imtlct.com

Test reports may not be reproduced except in full with approval of IMTL. All results relate to the items tested. Test reports must not be used by client to claim product endorsement by NVLAP or any agency of the US Government.



Accurate information you can rely on.

Relative Humidity of Concrete Slabs

Client: Fuss & O'Neill, Inc. Project No.: 5185
Project: Sage Park Middle School Report No.: 004
Inspector: Spencer Roy Date Cast: Unknown
Contractor: Unknown Date Set: 8/17/2021
Subject: Relative Humidity of Concrete Slabs Date Tested: 8/18/2021

The following is a report of relative humidity in Concrete Floor Slabs Using in situ Probes. These tests were conducted in accordance with ASTM F 2170. This test method covers the quantitative determination of percent relative humidity in concrete slabs for field or laboratory tests. The tests were conducted utilizing a Wagner Rapid RH 4.0 Easy Reader. Each test location was prepared and allowed to stand for 24 hours to achieve moisture equilibrium within the test holes.

Upon Installation: Air Temp. 67°F

CONCRETE SLAB APPROXIMATE THICKNESS: 4"

Test No.	Location	Serial #	Depth from Top of Slab (in.)	RH in Concrete (%)	Temp in Concrete (°F)	Air Temp (°F)
1	Room 111	L620056729	1.5"	99	73	68
2	Room 115	L620058775	1.5"	99	71	68
3	Room 117	L620058794	1.5"	99	73	68

Instrument Used

Make, Model, Serial Number
RH Rapid Reader



pc: Jason LeDoux, P.E., Fuss & O'Neill, Inc.
rmk

Independent Materials Testing Laboratories, Inc.
57 N. Washington St., P.O. Box 745, Plainville, CT 06062

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Test reports may not be reproduced except in full with approval of IMTL. All results relate to the items tested.

Sage Park Middle School
25 Sage Park Road, Windsor, CT 06095
860-687-2030

