

# **BID PACKAGE**

**PUTNAM PUBLIC SCHOOLS  
126 CHURCH STREET  
PUTNAM, CONNECTICUT**

## **AIR DUCT CLEANING**

**OWNER:** PUTNAM PUBLIC SCHOOLS  
126 CHURCH STREET  
PUTNAM, CONNECTICUT 06260

**OWNER CONTACT:** NANCY T. COLE  
SCHOOL BUSINESS ADMINISTRATOR  
TEL: 860-963-6900  
E-MAIL: COLEN@PUTNAM.K12.CT.US

**FEBRUARY 2007**

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**INVITATION TO BID**

ISSUING OFFICE: PUTNAM PUBLIC SCHOOLS  
ADMINISTRATIVE OFFICES  
126 CHURCH STREET  
PUTNAM, CONNECTICUT 06260-1890

PROJECT: **AIR DUCT CLEANING**

Bidders are invited to submit a sealed proposal on the Bid Form provided in accordance with the requirements of this bid package and the following instructions. The work comprises cleaning the air ducts at three schools: Putnam Elementary School, Putnam Middle School and Putnam High School.

The Awarding Authority will receive Bids until **9:00 AM on Friday, March 9, 2007**, at the Putnam Public Schools Administrative Offices. Interested parties are invited to attend. Bids will be opened publicly and read aloud immediately after the specified bid closing time.

Bid proposals are to be submitted on the enclosed Bid Form in a sealed envelope and addressed as follows:

Putnam Public Schools  
BID – AIR DUCT CLEANING  
126 Church Street  
Putnam CT 06260

Refer to the "Bid Specifications" of this bid package for other bidding requirements. No bidder may withdraw their bid within thirty (30) calendar days after the actual date of opening thereof without the consent of the Owner.

Bid documents may be requested or picked up from the Putnam Public Schools Administrative Offices on or after Friday, February 16, 2007 (Saturdays, Sundays and Legal Holidays excluded) between the hours of 9:00 AM and 4:00 PM. Contact Nancy Cole by calling 860-963-6900 or via e-mail at: colen@putnam.k12.ct.us.

**A mandatory Pre-Bid Conference will be held beginning at Putnam Elementary School, 33 Wicker Street, Putnam, CT on Friday, February 23, 2007 at 10:00 AM.** Contact Dale Smith, Director of School Facilities at 860-963-6930 if you have any questions.

Prospective Bidders' attention is referred to the State requirements pertaining to conditions of employment to be observed, including Workmen's Compensation and Equal Employment Opportunities. The Awarding Authority reserves the right to waive irregularities and to reject any or all bids, wholly or in part, to waive any informalities or defects in any or all bids and to make awards deemed in the best interest of the Putnam Public Schools.

Per order of  
Margo M. Marvin  
Superintendent of Schools

**PART 1 – GENERAL****1.01 QUALIFICATIONS OF THE HVAC SYSTEM CLEANING CONTRACTOR**(A) Membership

The HVAC system cleaning contractor shall be a certified member of the National Air Duct Cleaners Association (NADCA), or shall maintain membership in a nationally recognized non-profit industry organization dedicated to the cleaning of HVAC systems.

(B) Certification

The HVAC system cleaning contractor shall have a minimum of one (1) Air System Cleaning Specialist (ASCS) certified by NADCA on a full time basis, or shall have staff certified by a nationally recognized certification program and organization dedicated to the cleaning of HVAC systems.

(C) Supervisor Qualifications

A person certified as an ASCS by NADCA, or maintaining an equivalent certification by a nationally recognized program and organization, shall be responsible for the total work herein specified.

(D) Experience

The HVAC system cleaning contractor shall submit a list of projects where they have performed HVAC system cleaning services. Bids shall only be considered from firms which are regularly engaged in HVAC system maintenance with an emphasis on HVAC system cleaning and decontamination.

(E) Equipment, Materials and Labor

The HVAC system cleaning contractor shall possess and furnish all necessary equipment, materials and labor to adequately perform the specified services.

1. The contractor shall assure that its employees have received safety equipment training, medical surveillance programs, individual health protection measures, and manufacturer's product and material safety data sheets (MSDS) as required for the work by the U.S. Occupational Safety and Health Administration, and as described by this specification.
2. The contractor shall maintain a copy of all current MSDS documentation and safety certifications at the site at all times, as well as comply with all other site documentation requirements of applicable OSHA programs and this specification.
3. The contractor shall submit to the owner all Material Safety Data Sheets (MSDS) for all chemical products proposed to be used in the cleaning process.

(F) Licensing

The HVAC system cleaning contractor shall provide proof of maintaining the proper license(s), if any, as required to do work in this state. Contractor shall comply with all Federal, state and local rules, regulations, and licensing requirements.

**1.02 STANDARDS**

(A) NADCA Standards

The HVAC system cleaning contractor shall perform the services specified here in accordance with the current published standards of the National Air Duct Cleaners Association (NADCA) or other recognized duct cleaning organization.

**1.03 DOCUMENTS**

(A) Mechanical Drawings

The owner has available for review at the site the following documents:

1. Original project drawings for the Elementary School and Middle School. The original project drawings for the High School are not available.

**PART 2 – HVAC SYSTEM CLEANING REQUIREMENTS****2.01 SCOPE OF WORK**

(A) The scope of work for this project will include cleaning of all HVAC ductwork and accessories at the Putnam Elementary School, Middle School and High School. The extent of ductwork to be cleaned shall be determined by review of available construction documents and field verification.

(B) The Contractor shall be responsible for the removal of visible surface contaminants and deposits from within the HVAC system in strict accordance with these specifications.

(C) The HVAC system includes any interior surface of the facility's air distribution system for conditioned spaces and/or occupied zones. This includes all Heating, Ventilating and Air Conditioning systems from the points where the air enters the system to the points where the air is discharged from the system. The return air grilles, return air ducts to the air handling unit (AHU), interior surfaces of the AHU, mixing box, coil compartment, condensate drain pans, supply air ducts, fans, fan housing, fan blades, turning vanes, filters, filter housings, reheat coils, and supply diffusers are all considered part of the HVAC system. The HVAC system may also include other components such as dedicated exhaust and ventilation components and make-up air systems. The Kitchen Hood Exhaust systems are not included in the scope of work.

**2.02 HVAC SYSTEM INSPECTION AND SITE PREPARATIONS****(A) HVAC System Component Inspections**

Prior to the commencement of any cleaning work, the HVAC system cleaning contractor shall perform a visual inspection of the HVAC system to determine appropriate methods, tools, and equipment required to satisfactorily complete this project. The cleanliness inspection should include air handling units and representative areas of the HVAC system components and ductwork. In HVAC systems that include multiple air handling units, a representative sample of the units should be inspected.

(B) The cleanliness inspection shall be conducted without negatively impacting the indoor environment through excessive disruption of settled dust, microbial amplification or other debris. In cases where contamination is suspected, and/or in sensitive environments where even small amounts of contaminant may be of concern, environmental engineering control measures should be implemented

1. Damaged system components found during the inspection shall be documented and brought to the attention of the owner.

**(C) Site Evaluation and Preparations**

Contractor shall conduct a site evaluation, and establish a specific, coordinated plan which details how each area of the building will be protected during the various phases of the project.

**(D) Inspector Qualifications**

Qualified personnel should perform the HVAC cleanliness inspection to determine the need for cleaning. At minimum, such personnel should have an understanding of HVAC system design, and experience in utilizing accepted indoor environmental sampling practices, current industry HVAC cleaning procedures, and applicable industry standards.

**2.03 GENERAL SYSTEM CLEANING REQUIREMENTS**(A) Containment

Debris removed during cleaning shall be collected and precautions must be taken to ensure that Debris is not otherwise dispersed outside the HVAC system during the cleaning process.

(B) Particulate Collection

Where the Particulate Collection Equipment is exhausting inside the building, HEPA filtration with 99.97% collection efficiency for 0.3-micron size (or greater) particles shall be used. When the Particulate Collection Equipment is exhausting outside the building, Mechanical Cleaning operations shall be undertaken only with Particulate Collection Equipment in place, including adequate filtration to contain Debris removed from the HVAC system. When the Particulate Collection Equipment is exhausting outside the building, precautions shall be taken to locate the equipment down wind and away from all air intakes and other points of entry into the building.

(C) Controlling Odors

Measures shall be employed to control odors and/or mist vapors during the cleaning process.

(D) Component Cleaning

Cleaning methods shall be employed such that all HVAC system components must be Visibly Clean as defined in applicable industry standards. Upon completion, all components must be returned to those settings recorded just prior to cleaning operations.

(E) Air-Volume Control Devices

Dampers and any air-directional mechanical devices inside the HVAC system must have their position marked prior to cleaning and, upon completion, must be restored to their marked position.

(F) Service Openings

The contractor shall utilize service openings, as required for proper cleaning, at various points of the HVAC system for physical and mechanical entry, and inspection.

1. Contractor shall utilize the existing service openings already installed in the HVAC system where possible.
2. Other openings shall be created where needed and they must be created so they can be sealed in accordance with industry codes and standards.
3. Closures must not significantly hinder, restrict, or alter the airflow within the system.
4. Closures must be properly insulated to prevent heat loss/gain or condensation on surfaces within the system.
5. Openings must not compromise the structural integrity of the system.
6. Construction techniques used in the creation of openings should conform to requirements of applicable building and fire codes, and applicable NFPA, SMACNA and industry standards.
7. Cutting service openings into flexible duct is not permitted. Flexible duct shall be disconnected at the ends as needed for proper cleaning and inspection.

8. All service openings capable of being re-opened for future inspection or remediation shall be clearly marked and shall have their location reported to the owner in project report documents.

(G) Ceiling Tile

The contractor may remove and reinstall ceiling sections to gain access to HVAC systems during the cleaning process.

(H) Air Distribution Devices (registers, grilles & diffusers)

The contractor shall clean all air distribution devices.

(I) Air Handling Units, Blowers and Exhaust Fans

The contractor shall insure that supply, return, and exhaust fans and blowers are thoroughly cleaned. Areas to be cleaned include blowers, fan housings, plenums (except ceiling supply and return plenums), scrolls, blades, or vanes, shafts, baffles, dampers and drive assemblies. All visible surface contamination deposits shall be removed in accordance with industry Standards. Contractor shall:

1. Clean all air handling units (AHU) internal surfaces, components and condensate collectors and drains.
2. Assure that a suitable operative drainage system is in place prior to beginning wash down procedures.
3. Clean all coils and related components, including evaporator fins.

(J) Duct Systems

1. Contractor shall create service openings in the system as necessary in order to accommodate cleaning of otherwise inaccessible areas.
2. Contractor shall mechanically clean all duct systems to remove all visible contaminants, such that the systems are capable of passing Cleaning Verification Tests (see NADCA Standards).

## 2.04 HEALTH AND SAFETY

(A) Safety Standards

Cleaning contractors shall comply with applicable federal, state, and local requirements for protecting the safety of the contractor's employees, building occupants, and the environment. In particular, all applicable standards of the Occupational Safety and Health Administration (OSHA) shall be followed when working in accordance with this specification.

(B) Occupant Safety

No processes or materials shall be employed in such a manner that they will introduce additional hazards into occupied spaces.

(C) Disposal of Debris

All Debris removed from the HVAC System shall be disposed of in accordance with applicable federal, state and local requirements.



**2.05 MECHANICAL CLEANING METHODOLOGY****(A) Source Removal Cleaning Methods**

The HVAC system shall be cleaned using Source Removal mechanical cleaning methods designed to extract contaminants from within the HVAC system and safely remove contaminants from the facility. It is the contractor's responsibility to select Source Removal methods that will render the HVAC system Visibly Clean and capable of passing cleaning verification methods (See applicable Industry Standards) and other specified tests, in accordance with all general requirements. No cleaning method, or combination of methods, shall be used which could potentially damage components of the HVAC system or negatively alter the integrity of the system.

1. All methods used shall incorporate the use of vacuum collection devices that are operated continuously during cleaning. A vacuum device shall be connected to the downstream end of the section being cleaned through a predetermined opening. The vacuum collection device must be of sufficient power to render all areas being cleaned under negative pressure, such that containment of debris and the protection of the indoor environment are assured.
2. All vacuum devices exhausting air inside the building shall be equipped with HEPA filters (minimum efficiency), including hand-held vacuums and wet-vacuums.
3. All vacuum devices exhausting air outside the facility shall be equipped with Particulate Collection including adequate filtration to contain Debris removed from the HVAC system. Such devices shall exhaust in a manner that will not allow contaminants to re-enter the facility. Release of debris outdoors must not violate any outdoor environmental standards, codes or regulations.
4. All methods require mechanical agitation devices to dislodge debris adhered to interior HVAC system surfaces, such that debris may be safely conveyed to vacuum collection devices. Acceptable methods will include those, which will not potentially damage the integrity of the ductwork, nor damage porous surface materials such as liners inside the ductwork or system components.

**(D) Cleaning of Coils**

1. Any cleaning method may be used which will render the Coil Visibly Clean and capable of passing Coil Cleaning Verification (see applicable Industry Standards). Coil drain pans shall be subject to Non-Porous Surfaces Cleaning Verification. The drain for the condensate drain pan shall be operational. Cleaning methods shall not cause any appreciable damage to, displacement of, inhibit heat transfer, or erosion of the coil surface or fins, and shall conform to coil manufacturer recommendations when available. Coils shall be thoroughly rinsed with clean water to remove any latent residues.

(E) Antimicrobial Agents and Coatings

1. Antimicrobial agents shall only be applied if active fungal growth is reasonably suspected, or where unacceptable levels of fungal contamination have been verified through testing.
2. Application of any antimicrobial agents used to control the growth of fungal or bacteriological contaminants shall be performed after the removal of surface deposits and debris.
3. When used, antimicrobial treatments and coatings shall be applied in strict accordance with the manufacturer's written recommendations and EPA registration listing.
4. Antimicrobial coatings shall be applied according to the manufacturer's written instructions. Coatings shall be sprayed directly onto interior ductwork surfaces, rather than "fogged" downstream onto surfaces.

**2.06 CLEANLINESS VERIFICATION**(A) General

Verification of HVAC System cleanliness will be determined after mechanical cleaning and before the application of any treatment or introduction of any treatment-related substance to the HVAC system, including antimicrobial agents and coatings.

(B) Visual Inspection

The HVAC system shall be inspected visually to ensure that no visible contaminants are present.

1. If no contaminants are evident through visual inspection, the HVAC system shall be considered clean; however, the owner reserves the right to further verify system cleanliness through Surface Comparison Testing or the NADCA vacuum test specified in the NADCA standards.
2. If visible contaminants are evident through visual inspection, those portions of the system where contaminants are visible shall be re-cleaned and subjected to re-inspection for cleanliness.
3. NADCA vacuum test analysis should be performed by a qualified third party experienced in testing of this nature.

(C) Verification of Coil Cleaning

1. Cleaning must restore the coil pressure drop to within 10 percent of the pressure drop measured when the coil was first installed. If the original pressure drop is not known, the coil will be considered clean only if the coil is free of foreign matter and chemical residue, based on a thorough visual inspection (see NADCA Standards).

**2.07 PRE-EXISTING SYSTEM DAMAGE**

(A) Contractor is not responsible for problems resulting from prior inappropriate or careless cleaning techniques of others.

**2.08 POST PROJECT REPORT**

(A) At the conclusion of the project, the Contractor shall provide a report to the owner indicating the following:

1. Success of the cleaning project, as verified through visual inspection and/or gravimetric analysis.
2. Areas of the system found to be damaged and/or in need of repair.

**2.09 APPLICABLE STANDARDS AND PUBLICATIONS**

The following current standards and publications of the issues currently in effect form a part of this specification to the extent indicated by any reference thereto:

(A) National Air Duct Cleaners Association (NADCA): "Assessment, Cleaning & Restoration of HVAC Systems (ACR 2005)," 2004.

(B) National Air Duct Cleaners Association (NADCA): "Understanding Microbial Contamination in HVAC Systems," 1996.

(C) National Air Duct Cleaners Association (NADCA): "Introduction to HVAC System Cleaning Services," 2004.

(D) National Air Duct Cleaners Association (NADCA): Standard 05 "Requirements for the Installation of Service Openings in HVAC Systems," 2004.

(E) Underwriters' Laboratories (UL): UL Standard 181.

(F) American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE): Standard 62-89, "Ventilation for Acceptable Indoor Air Quality."

(G) Environmental Protection Agency (EPA): "Building Air Quality," December 1991.

(H) Sheet Metal and Air Conditioning Contractors' National Association (SMACNA): "HVAC Duct Construction Standards - Metal and Flexible," 1985.

**BID FORM**

DATE: \_\_\_\_\_

SUBMITTED BY: \_\_\_\_\_  
Firm Name

\_\_\_\_\_  
Mailing Address

\_\_\_\_\_  
City/State/Zip

TELEPHONE: (\_\_\_\_) \_\_\_\_\_

FAX: (\_\_\_\_) \_\_\_\_\_

E-MAIL: \_\_\_\_\_

CONTACT: \_\_\_\_\_  
Name/Title

**1. BID PROPOSAL**

The undersigned hereby attests-by-signature, having examined the details in the Invitation to Bid and Bid Specifications and proposes to clean the air ducts at Putnam Elementary School, Putnam Middle School and Putnam High school and hereby offers to perform the work for the sum as indicated below:

Description	PRICE
Putnam Elementary School	\$

Putnam Middle School	\$
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Putnam High School	\$
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**TOTAL** \$ \_\_\_\_\_

The undersigned certifies under penalty of perjury that this bid is in all respects bonafide, fair and made without collusion or fraud with any other person. As used in this Section, the word "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

**2. ACCEPTANCE**

This offer shall be open to acceptance and is irrevocable for thirty (30) days from the bid closing date. If the school system accepts this bid within thirty (30) days, it will:

- ✓ Coordinate the start of the work with the vendor to ensure that all of the work on the project will be completed by June 1, 2007.

**3. INSTALLATION HOURS**

The undersigned certifies that he/she will schedule the work to conform with the school system's operations and that the work will be performed during mutually agreed upon hours.

**4. COMPLETION TIME**

The undersigned also agrees that if this bid is accepted, he/she will complete the project no later than June 1, 2007.

**5. BID FORM SIGNATURE**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Typed Name/Title

**END OF DOCUMENT**