

# **SPECIFICATIONS:**

## Vertical Waste Solutions LLC VWS3 or VWS2 Automated Recycling System

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### VERTICAL WASTE SOLUTIONS LLC – Waste Disposal & Recycling System

As one of North America's most experiences waste equipment manufacturing and service providers since 1999 for residential high-rise properties, we provide project specific waste and recycling system design for architects, engineers and developers. Call 214.447.0661 for any questions, or to request a of specifications via email.

#### WASTE AND RECYCLING SYSTEM

The system is designed to address commingled and organics-based recycling programs in multistory buildings to allow <u>recycling to be as convenient as garbage disposal</u>. The system allows residents to dispose of garbage and recyclables down a single refuse chute.

VWS offers three different designs:

- 1. Centre-feed unit
- 2. End-feed unit
- 3. Corner unit

Tenant-activated buttons on a control panel incorporated above each chute intake door activates the appropriate container selection in the garbage room located below. As the correct intake door is signaled available to the tenant, they then dispose of the material down the chute.

Each Recycling System is comprised of:

- ✓ VWS Recycling System (Centre-feed, End-feed, or Corner unit models)
- ✓ Resident Control Panels for garbage, recycling, and/or organics access
- ✓ Stationary apartment compactor such as the VWS60 or VWS52
- ✓ Garbage compaction containers, if required (3-yard)
- ✓ Front end loading recycling containers, if required (duals, 2, or 3 yard)
- ✓ Front end loading organic containers, if required (duals, 2, or 3yard)
- ✓ Front end loading bulky item containers, if required (2, or 3-yard)
- ✓ Air Purification / odor control system
- ✓ VWS Chute Blocker & Ram Blocker Safety System
- ✓ VWS Bin Buddy or tractor

#### Benefits:

- ✓ Minimizes size of chute rooms on each floor and increases saleable square footage
- Convenience Residents & government mandate builders to provide recycling & organics facilities that are as convenient as garbage disposal facilities
- ✓ Compliance with state, county and local recycling laws
- Eliminates costs associated with floor-by-floor recycling collection & extensive cleaning of trash rooms located on each floor
- ✓ Operates only in seconds and automatically defaults to garbage position
- ✓ Saves valuable ground floor area by eliminating the recycling depot room



### SECTION 11175 - WASTE / RECYCLING SYSTEM

This section is based on a system produced by:

## VERTICAL WASTE SOLUTIONS LLC.

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The VWS waste & recycling system, manufactured and installed by VERTICAL WASTE SOLUTIONS LLC. (VWS, is comprised of a VWS recycling system (in-line, corner or end-feed model) as appropriate to the installation, resident floor control panels, a waste compactor if required (such as VWS Compactor Model VWS60 or VWS52), compaction, recycling and/or organics containers (if required), a VWS chute and/or ram Blocker, and VWS odor control as appropriate to the installation.

#### Part 1 GENERAL

#### 1.1 RELATED DOCUMENTS

A. The general provisions of the contract, including General and Division 1, General Requirements, apply to the work specified in this section.

#### 1.2 SYSTEM OPERATION

A. The two or three-component sorter uses a single waste/recycling chute in a multistory building to distribute materials pre-separated by tenants into two or three separate containers, as determined by the county and or city. Tenant-activated buttons on a control panel incorporated above each chute intake door shall initiate appropriate container selection. As the correct container is accessed by the chute, the chute intake door is signaled available to the tenant who then disposes of the material.

#### 1.3 DESCRIPTION OF WORK

- A. Work Included: Furnish and install a waste recycling system as shown on drawings.
- 1.4 SUBMITTALS
  - A. Catalog Cuts: Before the waste recycling system is delivered to the job site, submit catalog cuts to the Architect in accordance with these specifications, showing all details of installation and assembly and all requirements for work by other trades.
  - B. Product Data: Manufacturer's product specifications, standard details and recommendations for project conditions; indicate selected sizes and installation details specific to the project.
  - C. Shop Drawings:

- 1: Plans: Scale ¼ inch to 1 foot; indicate locations, dimensions, and required associated construction activities.
- 2: Elevations/Sections: Scale ¼ inch to 1 foot, indicate locations, dimensions, and required associated required construction activities.
- 3: Details: Scale ¼ inch to 1 foot; indicate:
  - a. Shop drawings specific to project conditions
  - b. Interface with adjacent construction
  - c. Dimensions and tolerances
  - d. Products required for installation of the waste recycling system, but not supplied by waste recycling system manufacturer.
- D. Quality Assurance/Control Submittals:
  - 1: Contractor's Certification that:
    - a. Products of this section are manufactured by Vertical Waste Solutions LLC. **NO SUBSTITUTIONS.**
    - b. Manufacturer's certification that installer of manufacturer's product is approved.
- D. Close-out Submittals:
  - 1. Operation and Maintenance Data:
    - a. Manufacturer's printed Operation and Safety Manual
    - b. Manufacturer's Building Recycling Education Package
  - 2. Warranty Documents: Issued and executed by the manufacturer and installer of the system.

#### 1.5 QUALITY ASSURANCE

- A. Qualifications:
  - 1. Manufacturer: Minimum five (5) years-documented experience producing products specified in this section.
  - 2. Installer: Approved by the waste recycling system manufacturer and having a minimum of five (5) years experience.
- B. Pre-Installation Meetings:
  - 1. Convene at job-site a minimum of seven (7) calendar days prior to scheduled beginning of construction activities of this section to review requirements of this section.
  - 2. Require attendance by representatives of the following:
    - a. Waste recycling system manufacturer or designated representative
    - b. Installer of this section
    - c. Other entities directly affecting, or affected by, construction activities of this section.

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- d. Notify Architect four (4) calendar days in advance of scheduled meeting date.
- C. Workmanship shall be of highest quality, in accordance with the best standard practice for installation of this equipment. Execute work in accordance with drawings, specifications, and manufacturer's printed directions.

#### 1.6 RELATED WORK BY OTHERS SPECIFIED ELSEWHERE

- A. The following work is excluded from the scope of work in this section 11175 and is included in other divisions of the specifications for inclusion in the scope of work of others.
- 1. Electrical Standards: The following electrical circuits, with disconnects are required and are to be installed by others as shown on the plans (Onsite construction electrician to perform the final connection of the compactor and master control panel after installation.)
  - a) Local load center, consisting of:
    - I. 110VAC, 20 amp, 1-phase, 60Hz for recycling system Master Control Panel (MCP) for VWS recycling system
    - II. 110VAC, 15 amp, 1-phase for local electrical service plug for maintenance.
    - III. 208VAC, 20 amp, 3-Phase, 4-wire, compactor circuit with neutral. (575V available). Final connection by others.
    - IV. Wiring conduit: EMT conduit, 1" or 3/4" diameter, for vertical installation, located in accordance with shop drawings for connecting VWS MCP control panel, chute intake door control panel and devices, and other elements indicated on the shop drawings.
    - V. Final connection of power & conduits to VWS recycling system and compactor control panels to be by construction electrician.
- 2. a) Provision of electrical back boxes (6" x 6" x 4" standard electrical junction boxes -DUKO664) for flush-mount or surface mount installation to house on-floor electrical components to be provided by others. Boxes must have four (4) screw holes for mounting – one hole on the outside of each corner. Enclosure to be flush-mounted to wall. Location of installation of boxes to be provided and confirmed by VWS.

b) If chute is supplied by others - chute supplier integrated chute doors can also be used. Subsection (a) may be eliminated if another chute supplier is providing this door as part of their scope of work, and is installing the garbage chute, as all housing of electrical components will be incorporated into this chute door. All cover plates to be supplied to suit the VWS floor control panels will be the responsibility of others. (square punch-out required).

- 3. Slab openings for chute, conduit, mechanical risers, etc., including sleeves.
- 4. Roof preparation and completion after chute vent is supplied.

#### 1.7 WARRANTY

A. Manufacturer's warranty: Furnish waste recycling system manufacturer's standard one (1) year warranty from date of temporary certificate of occupancy or similar, locally mandated permission to use the project common areas for their intended use. Warranty shall apply to defects in product workmanship and materials.

#### Part 2 - PRODUCTS

- 2.1 MATERIALS
  - A. Acceptable manufacturers: <u>VERTICAL WASTE SOLUTIONS LLC.</u> Telephone: 214.447.0661 / E: <u>info@verticalwaste.com</u>
  - B. Substitutions: NOT PERMITTED.
  - C. Components:
  - 1. Fabricate, supply and install one (1) VWS Ram Blocker. ¼" steel plate to allow maintenance staff to close off compactor opening during maintenance activities, if specified with a compactor.
  - 2. VWS Recycling System Construction: The system shall be of 3/16" inch welded steel plate construction. It shall utilize 1/4" inch steel diverter blades to deflect materials from the chute to appropriate containers. High torque 110VAC motors driving ball screw actuated jacks shall drive the deflector mechanisms appropriately. The system shall be shock-mounted to the floor and be decoupled from the chute to decrease noise transmission. VWS recycling system to be detached from the garbage chute. VWS recycling system to contain acoustic provisions for system installation.
  - 3. Master Control Panel: A Master Control shall be housed in a CSA approved enclosure mounted on a wall in the vicinity of the VWS recycling system in the trash/garbage room a minimum of 55" above the floor to the bottom of the panel. The Master Control Panel shall control and monitor all mechanical and electronic operating functions of the Recycling System. Inherent in the design of the control will be suitable repair and serviceability standards including plug-in connectors where possible.
  - 4. Manual Service Switch: As part of the Master Control Panel (MCP), manually actuated service switch shall be provided to permit over-riding of system as required for purposes of systems shut-down for service and other needs.
  - 5. Floor Control Buttons: Incorporated or separate from chute door. Stations permit user selection of material types for disposal, transmit "In Use" signals to all other floor control panel units, and perform the following additional functions:
    - a. Activate diverter baffles to deflect material into compactor or recycling containers as appropriate to materials selection made at a Floor Control Panel.
    - b. Self-diagnostic program detects system component failure, then transmits notification to maintenance personnel on location via "Maintenance" signal to all floor control panels.
  - 6. Optional: Stationary Apartment Compactor: VWS60 (or other model as specified) fully automatic, electric eye controlled, hydraulically operated, stationary ram compactor with a 38 second cycle time, displacing garbage into a heavy-duty compaction container of a design compatible with local requirements. CSA approved control. The

Vertical Waste Solutions LLC Tel: 214.447.0661 / Email: info@verticalwaste.com compactor body and top is 1/4" inch steel plate, while the sides are 1/4" inch steel plate. The compactor ram is constructed of 1/4" inch sides and top with 1/4" inch steel plate bottom. The ram face is 1/4" inch steel plate, reinforced. Hopper to be 10 gauge steel plate with a 1/4" inch slope to take the impact of falling refuse. The compactor floor is 1/4" inch thick steel.

- 7. The VWS60 produces 8,500 pounds of packing force at 800 psi. (5500 kPa). Hydraulic Power Packs: A prepackaged power system with components rated at 3000 psi operating at a recommended pressure of 800 psi for long life and low maintenance. Motor 2 HP @ 1800 RPM. This power pack is rated for a 3 to 1 compaction ratio, as recommended by local authorities having jurisdiction.
- 8. Control panel to be part of the power pack, located on either side of the compactor and including:
  - a. On/off power switch
  - b. Power on light
  - c. Full light
  - d. Automatic continuous cycling when electric eye is activated
  - e. Automatic shut off when container is full
  - f. CSA approved controls
- 9. Optional: Recycling Containers: Industry standard 95-gallon containers or VWS dual FEL containers, or 2/3 cubic yard (2.29 m<sup>3</sup>) containers for recyclables (commingled or paper/container streams depending on municipality). VWS assumes developer is in compliance with local development by-laws dealing with new developments. 6x2" heavy-duty polyurethane wheels, 2 swivel, 2 fixed casters. Tow hitch included. Painted blue, if included in contract.
- Optional: Organics Containers: Industry standard 95-gallon containers or VWS dual FEL containers, or 2/3 cubic yard (2.29 m<sup>3</sup>) containers for organics. VWS assumes developer is in compliance with local development by-laws dealing with new developments. 6x2" polyurethane casters to be used. Tow hitch included. Painted green, if included in contract.
- 11. Optional: Garbage compaction containers: 3 cubic yards, front end loading, length 78" inch, width 47" inch, height 60" inch (overalls indicated), fully welded bottom and sides, reinforced 10 gauge steel plate. 6x2" polyurethane casters, 2 swivel, 2 fixed. Designed to mate with VWS60 or VWS52 compactor, with reinforced floor and lift pockets, and standard "hold down bar" on double steel lids included. Containers will be 12 gauge steel sides, 10 gauge steel bottom, 14 gauge steel lids, 10 gauge steel charging door. VWS assumes developer is in compliance with all local development by-laws dealing with new developments. Tow hitch included on containers. Painted black, if included in contract.
- 12. Optional: VWS odor control system to be installed in the waste and recycling room
- 13. Optional: VWS chute blocker to be installed under recycling chute (if applicable) for maintenance staff safety.
- Optional: VWS ram blocker to be installed on compactor for maintenance staff safety.
- 15. Optional: VWS bin buddy battery operated container mover.

#### 2.2 FABRICATION

A. The VWS waste recycling system shall be fully factory assembled and all joints, except those required to separate the sections for shipment and installation shall be welded or lock-seamed tight. The VWS recycling system and/or compactor shall come complete and welded, ready for installation. Discharge hoppers and offsets, where required, shall be reinforced and separately supported in the impact area.

## Part 3 EXECUTION

### 3.1 EXAMINATION

- A. Verification of conditions:
  - 1. Area in which system is to be located is correct size and location and is prepared for installation of waste recycling system components.
  - 2. Electrical power source is in correct location, and is correct voltage, amperage capacity, and phase for recycling system electrical components.
  - 3. Low voltage conduit is in correct location, and is correct size and capacity for waste recycling system low-voltage electrical components.
- B. Installer's examination:
- 1. Have installer of this section examine conditions under which construction activities of this section are to be performed, then submit written notification if conditions under which construction activities of this section are to be performed are unacceptable.
- 2. Beginning construction activities of this section before unacceptable conditions have been corrected is prohibited.
- 3. General Contractor shall verify and record chute alignment with installer immediately following installation.

## 3.2 INSTALLATION

- a) Install waste recycling system components in accordance with shop drawings and manufacturer's printed installation instructions.
- 3.3 DEMONSTRATION, TESTING, AND INSTRUCTION
  - a) Arrange demonstration of system operation, conducted by manufacturer's representative, to Owner's maintenance personnel.
  - b) Provide maintenance manual. Instruct owner's maintenance personnel in proper use and maintenance of equipment.

## \* END OF SECTION \*