TORONTO

Application

Commitment to General Reviews

Folder No.

District Offices

☑ Toronto and East York ☐ North York ☐ Scarborough ☐ Etobicoke York

PART A – To be Completed by Owner

Project Description
Aquavista Condominiums

Address of Project
263 Queen's Quay East

WHEREAS the Ontario Building Code requires that the project described above be designed and reviewed during construction or demolition by an architect, professional engineer or both that are licensed to practice in Ontario;
WHEREAS Ontario Law prohibits the construction or demolition of a building if a permit has not been issued to authorize it, and
WHEREAS Architects and engineers are prohibited by law from undertaking reviews if a permit has not been issued,
NOW THEREFORE the Owner, who intends to construct or demolish or have the building constructed or demolished hereby confirms that:

1. The undersigned architect and/or professional engineers have been retained to provide general reviews of the construction or demolition of the building to determine whether the work is in general conformity with the plans and other documents that form the basis for the issuance of a permit, in accordance with the performance standards of the Ontario Association of Architects (OAA) and/or Professional Engineers of Ontario (PEO);
2. All general review reports by the architect and/or professional engineers will be forwarded promptly to the Chief Building Official;
3. Should any retained architect or professional engineer cease to provide general reviews for any reason during construction or demolition, the Chief Building Official will be notified in writing immediately, and another architect or engineer will be appointed so that general review continues without interruption; and
4. Construction or demolition will only be undertaken if an architect and/or professional engineers are retained to undertake general review, and a permit authorizing the proposed construction or demolition has been issued.

The undersigned hereby certifies that he/she has read and agrees to the above.

Owner's First Name	Last Name

Street No.	Street Name	Postal Code

Telephone No.	Mobile No.	Fax No.

Signature of Owner (Or authorized agent)	Print Name	Date (yyyy-mm-dd)

Co ordinator of the work of all consultants

Street No.	Street Name	Postal Code

Telephone No.	Mobile No.	Fax No.

Continue on next page

The personal information on this form is collected under the City of Toronto Act, S.O. 2006, Chapter 11, Schedule A, s. 136 (b) & (c) and the Ontario Building Code Act, 1992 Chapter 23. The information collected will be used for processing applications and creating aggregate statistical reports. Questions about this collection may be referred to the Customer Service Manager in the appropriate district. Toronto East York District, 100 Queen Street West, Ground Floor, West Tower, Toronto M5H 2N2, (416) 392-7539; North York District, 5100 Yonge Street, 1st Floor, Toronto M2N 5V7, (416) 395-7000; Etobicoke York District, 2 Civic Centre Court, 1st Floor, Toronto M9C 2Y2, (416) 394-8002, Scarborough District, 150 Borough Drive, 3rd Floor, Toronto M1P 4N7, (416) 396-7526

AQUAVISTA - 263 QUEEN'S QUAY EAST

Application

Commitment to General Reviews

PART B – To be completed by Consultants

The undersigned architect and/or professional engineer(s) hereby certify that they are qualified in and have been retained to provide general reviews of the parts of construction or demolition of the building indicated, to determine whether the work is in general conformity with the plans and other documents that form the basis for the issuance of a permit, in accordance with the performance standards of the OAA and/or PEO.

☐ Architectural ☐ Structural ☑ Mechanical ☑ Electrical ☐ Site Services

☐ Other:

Signature	Print Name	Date (yyyy-mm-dd)
[signature]	Al Medeiros	2015-05-01

Street No.	Street Name	Postal Code
207	Queen's Quay West, Suite 615	M5J 1A7

Telephone No.	Mobile No.	Fax No.
416 598 2920		416 598 5394

☐ Architectural ☐ Structural ☐ Mechanical ☐ Electrical ☐ Site Services

☐ Other:

Signature	Print Name	Date (yyyy-mm-dd)

Street No.	Street Name	Postal Code

Telephone No.	Mobile No.	Fax No.

☐ Architectural ☐ Structural ☐ Mechanical ☐ Electrical ☐ Site Services

☐ Other:

Signature	Print Name	Date (yyyy-mm-dd)

Street No.	Street Name	Postal Code

Telephone No.	Mobile No.	Fax No.

☐ Architectural ☐ Structural ☐ Mechanical ☐ Electrical ☐ Site Services

☐ Other:

Signature	Print Name	Date (yyyy-mm-dd)

Street No.	Street Name	Postal Code

Telephone No.	Mobile No.	Fax No.

Project No.
eco- _____

ecoENERGY
an ecoACTION initiative

MNECB Mandatory Requirement Checklist

PROJECT INFORMATION	
Building name	Aquavista-263 Queens Quay East

This form records whether all mandatory requirements of the Model National Energy Code for Buildings (MNECB) have been "Met". Design professionals are responsible for ensuring MNECB conformity. This form must be:

- completed by hand (not electronically)
- signed and dated by the appropriate professional for each section

If a mandatory is "Not met", provide the reason why in the notes section. Where an exemption has been granted by NRCan, check "Not met" and indicate in the notes section where in the submission the exemption documentation can be found.

The language of this checklist paraphrases the MNECB text. Please read the full text of the MNECB articles in question. In the case of conflict, the full text of the MNECB governs.

SCOPE

Architect's Signature _____

Applicability of MNECB	Met	Not met	Not Appl.
Building Type is not exempted under **Article 1.1.2.1.(1)-(5)**			
Building type and spaces definition conforms with defined terms. **(Article 1.1.3.2 and commentary in E-1.1.3.2.-1)**			

Notes: _____

BUILDING ENVELOPE

Architect's Signature _____

Partial Penetration of Envelope by Services	Met	Not met	Not Appl.
Recessed heaters, pipes and ducts that partially penetrate the building envelope must be located on the conditioned side of the insulation and must not increase the overall U-value of the building envelope assembly at the partial penetration to more than the U-value allowed for the overall assembly. **(Article 5.2.8.1-1)**			
If radiant heating sources, as opposed to recessed heaters, are embedded in above ground envelope components, the overall U-value at the projected area must not exceed 80% of the maximum overall U-value allowed in the MNECB Regional Tables. **(Article 3.2.3.3-3)**			

Full Penetration of Envelope by services	Met	Not met	Not Appl.
Insulation must be installed tight against any pipes, ducts, through-wall venting, packaged terminal A/C or heat pump units, shelf angles, anchors, ties and associated fasteners, and other minor structural members that must completely penetrate the building envelope to perform their intended function. **(Article 3.2.1.2-4)**			
Pipes and ducts in exterior wall must not exceed the overall thermal transmittance to greater than allowable for wall assembly. **(Article 3.2.1.2-10)**			

Roof and Floor Penetration of Envelope	Met	Not met	Not Appl.
Unless it is required functionally that a roof or floor fully penetrate the building envelope, the U-value at the projected area of the floor or roof shall be (Article 3.2.1.2-7&8) :			
Concrete roof or floor: Not more than twice that of the associated wall.			
Roof or floor other than concrete: Equal to or less than that of the associated wall.			

Partial Penetration of Envelope by Structural Components	Met	Not met	Not Appl.
Major structural members, such as columns or spandrel beams that run parallel to the building envelope may increase the U-value at the projected area of the member up to twice that shown in Table 3.3.1.1.A of Appendix A of the MNECB. **(Article 3.2.1.2-3)**			

Full Penetration of Envelope by Structural Components	Met	Not met	Not Appl.
Large components, such as floor slabs, beams, girders and columns, which must completely penetrate that building envelope to perform their required function, need not be insulated if the sum of their cross-sectional areas does not exceed 2% of the building envelope area. Insulation must be tight against such penetrations. **(Article 3.2.1.2-5)**			
Insulation that is continuous across expansion joints, and wall and door intersections maintain an overall thermal transmittance not greater than highest allowable for the two. **(Article 3.2.1.2-11)**			
All overhead doors separating conditioned from exterior space are weatherstripped on all edges in conformance. **(Article 3.2.4.3-5)**			

Full Penetration of Envelope by Walls	Met	Not met	Not Appl.
Where a concrete or masonry foundation wall, firewall or party wall penetrates an exterior wall or roof, it must be insulated on both sides, back from and to the same U-value as the exterior assembly for distance of four times its depth. **(Article 3.2.1.2-6)**			

Insulation Overlap	Met	Not met	Not Appl.
At envelope locations where two planes of insulation do not physically join, the two continuous insulations shall overlap for a length of at least 4 times the distance separating them. **(Article 3.2.1.2-9)**			

Windows and Doors	Met	Not met	Not Appl.
Wall insulation must extend to meet door and window frames. **(Article 3.2.1.2-11)**			
All windows comply with energy efficiency acts in force locally, or have been specified to maintain an A2 air leakage rating as described under CAN/CSA A440-M. **(Article 3.2.4.4.2)**			
All sliding doors comply with energy efficiency acts in force locally, or have been specified to maintain and A2 air leakage rating as described under CAN/CGSB-82.1-M. **(Article 3.2.4.3)**			
Confirm that air curtains are not being used in place of exterior doors. **(Article 3.2.4.3-6)**			

Below Grade Insulation	Met	Not met	Not Appl.
Building assemblies in contact with the ground must be constructed such that their area-weighted average RSI-value, including insulation, sheathing, exterior and interior finish materials and interior air films, shall not be less than that shown in Table 3.2.3.1 of Appendix A. **(Article 3.2.3.1a,.2a,.3a)**			
If a below grade wall requires insulation, it may be insulated over its full height, or to a depth of 2.4m, whichever is shallower. **(Article 3.2.3.1-3)**			
If the top of the footing is less than 0.6 m below grade, wall insulation shall extend down to the top of the footing and the same level of insulation shall be placed on top or below the floor for no less than 1 meter around the perimeter. **(Article 3.2.3.2-4)**			

For heated crawl spaces, crawl space floors (whether finished or not) that are less than 0.6 m below grade must be insulated to the level stipulated in MNECB Table 3.2.3.1 over the entire crawl space floor area. **(Article 3.2.3.1)**			

General	Met	Not met	Not Appl.
The overall thermal transmittance of opaque components of the building envelope shall not be increased to more than 167% of the maximum overall thermal transmittance permitted in Section 3.3. **(Article 8.2.1.4-2)**			

Vestibules	Met	Not met	Not Appl.
Vestibules are required for all doors that separate conditioned space from the outdoors. (Certain exceptions apply as indicated in MNECB.) **(Article 3.2.2.3)**			

Notes: _____

HEATING, VENTILATION AND AIR CONDITIONING

Mechanical Professional's Signature _____

Equipment	Met	Not met	Not Appl.
HVAC systems must be sized to meet the needs of conditioned spaces. **(Article 5.2.1.1-1)**	✓		
Equipment installed outdoors or in unconditioned spaces must be designed by the manufacturer for such installation. **(Article 5.2.1.1-1)**	✓		
HVAC equipment and components included in the scope of MNECB Table 5.2.13.1 must comply with the relevant local appliance/equipment energy efficiency act or the relevant standard listed. **(Article 5.2.13.1-1)**	✓		
Field-assembled equipment and components from more than one manufacturer must be designed with good engineering practice and provide the overall efficiency called for in **Article 5.2.13.1**.			✓

Temperature Controls	Met	Not met	Not Appl.
Each system intended to provide comfort heating/cooling must have at least one automatic space temperature control device. **(Article 5.2.10.1)**	✓		
Thermostatic controls for comfort are to have the following characteristics (Article 5.2.10.3):			
Heating controls must be capable of adjusting the temperature of the space they serve down to at least 13°C.	✓		
Cooling controls must be capable of adjusting the temperature of the space up to at least 29°C.	✓		
The sensors of wall-mounted thermostats must be installed in accordance with the manufacturer's instructions and are to be located as per **Article 5.2.10.4**.	✓		
Electric baseboard heaters must be controlled by remotely mounted thermostats. **(Article 5.2.7.1)**			✓
Heat pumps having supplementary heaters must be controlled to prevent supplementary heater operation when the heating load can be met by the heat pump alone, except during defrost cycles. **(Article 5.2.10.5)**			✓
If separate space-heating and -cooling controls are used, simultaneous provision of heating and cooling must be prevented. **(Article 5.2.10.6)**	✓		
The heating/cooling of a zone must be regulated by individual thermostatic controls located in the zone unless a perimeter system is used, in which case there must be at least one space thermostatic control per orientation (provided that the orientation is at least 15m long). **(Article 5.2.10.6)**	✓		

Shut-off and Setback	Met	Not met	Not Appl.
Each HVAC system with a heating or cooling capacity of 2 kW or more must have automatic equipment shut-off or temperature setback controls for periods of non-use, unless the system is intended to operate continuously. Unoccupied setback of heating set-point must not enable cooling, and unoccupied setup of cooling set-point must not enable heating. **(Article 5.2.12.1)**	✓		
Heating or cooling equipment with capacities below 2 kW may be controlled by accessible, manual controls. **(Article 5.2.12.1)**			✓

Airflow Control Areas	Met	Not met	Not Appl.
Each air distribution system serving multiple temperature control zones having a combined conditioned floor area > 2500 m^2 must be divided into airflow control areas of not more than 2500 m^2, or one storey, such that the supply of air to each area can be reduced or stopped independent of other areas. Areas requiring full flow continuously are exempt. **(Article 5.2.12.2-1 to 7)**			✓
The zones within a given area must be on the same occupancy schedule and have off-hours setback or on/off controls. **(Article 5.2.12.2-1)**	✓		
Where airflow control areas are served by VAV boxes, the central system must have at least a 50% reduction in fan power for a 50% reduction in air flow. **(Article 5.2.12.2-5)**			✓

Air Distribution Systems	Met	Not met	Not Appl.
Duct systems must be designed so that they can be balanced. **(Article 5.2.2.2-1)**	✓		
HVAC ducts and plenums must be sealed as per the SMACNA Duct Construction Standard and MNECB Table 5.2.2.3 unless they are RIA ducts in conditioned spaces and are downstream of coils/boxes. **(Article 5.2.2.4-1)**	✓		
HVAC ducts and plenums must be thermally insulated as per MNECB Section 5.2.2.5 (some exemptions apply). **(Article 5.2.2.5)**	✓		
S/A and RIA ducts located outdoors must be insulated to the level prescribed for exterior walls, and protected from mechanical damage, weathering and condensation. **(Article 5.2.2.6-2)**			✓

Air Intake and Outlet Dampers	Met	Not met	Not Appl.
Ducts or openings intended to discharge air from conditioned space to the outdoors or an unconditioned space, and outdoor air intakes must be equipped with motorized dampers. Exemptions to this requirement include combustion air intakes, kitchen exhausts, continuously operated systems, and very small ducts. **(Article 5.2.3.1)**	✓		

Humidification Systems	Met	Not met	Not Appl.
Humidifiers and dehumidifiers must be provided with an automatic humidity control device. If the purpose of the humidity control is comfort, the controller must be able to prevent the use of energy to increase relative humidity above 30% or to decrease it below 60%. **(Article 5.2.11.1-2)**			✓

Special Temperature and Humidity Requirements	Met	Not met	Not Appl.
Spaces with special process temperature requirements, humidity requirements or both must be served by separate air distribution systems from those serving spaces requiring only comfort conditions, unless the comfort air is 10% or less of the total, or unless the total design air flow does not exceed 3000 L/s. **(Article 5.2.9.1-2)**			✓

Hydronic Systems	Met	Not met	Not Appl.
All hydronic systems must be designed so they can be balanced as per Appendix E. **(Article 5.2.4.2-1)**	✓		
Multiple boiler systems must prevent heat loss through boilers when they are not in operation through the use of such items as vent dampers or shut-off valves interlocked with burners. **(Article 5.2.12.4)**	✓		

Pipes containing fluids with design operating temperatures outside the 13°C to 40°C range must be insulated as per MNECB Section 5.2.4.3. Some exemptions apply. **(Article 5.2.4.3)**	✓		
HVAC piping outside the building envelope must be insulated to the maximum requirements of Table 5.2.4.3. Insulation must be protected where it may be subjected to mechanical damage, weathering or condensation. **(Article 5.2.4.3-5)**	✓		
Seasonal pumping systems, such as heated and chilled water pumping systems, must have automatic controls or readily accessible and clearly labelled manual controls to shut down the pumps when they are not required. **(Article 5.2.12.3)**	✓		

Notes: _____

SERVICE WATER HEATING SYSTEMS

Mechanical Professional's Signature _____

Storage Vessels and Heating Equipment	Met	Not met	Not Appl.
Service water heaters, boilers, storage tanks and pool heaters must conform to relevant appliance or equipment energy efficiency acts, or with MNECB Table 6.2.2.1 where such an act doesn't apply. **(Article 6.2.2.1-1)**	✓		
Hot service water storage tanks located outdoors or in unconditioned spaces must be covered with insulation having a maximum U-value of 0.55 W/m^2-°C. **(Article 6.2.2.1-3)**			✓
Hot water storage tanks within conditioned spaces must be covered with insulation having a maximum U-value of 0.8 W/m^2-°C. **(Article 6.2.2.1-2)**	✓		
Tank insulation located where it may be damaged must be protected. **(Article 6.2.2.1-4)**			✓
Service water heating equipment, other than hot water storage tanks, must be installed in conditioned space. **(Article 6.2.2.2)**			✓

Controls	Met	Not met	Not Appl.
Service water heating systems with storage tanks must have automatic temperature controls capable of setting temperatures between the lowest and highest acceptable temperatures for the intended use. **(Article 6.2.4.1)**	✓		
Except for systems in which the storage capacity is less than 100 L, each service water heating system must have a readily accessible and clearly labelled device to allow shutdown. **(Article 6.2.4.2)**	✓		
Electric heat trace elements installed along service water pipes must have automatic controls to maintain the hot water temperature within the required range. **(Article 6.2.4.3)**	✓		

Water Conservation	Met	Not met	Not Appl.
Individual showerheads, used for reasons other than safety, must limit the maximum water discharge to 9.5 L/min. **(Article 6.2.6.1-1)**	✓		
Where multiple shower heads are served by one temperature control, each showerhead must have an automatic control device that shuts off the flow of water when the shower is not in use. **(Article 6.2.6.1-2)**			✓
Except in dwelling units, lavatory faucets must limit the maximum water discharge to 8.3 L/min. **(Article 6.2.6.2-1)**	✓		
Each lavatory in a public access washroom of an assembly occupancy building must have a device capable of automatically shutting off the flow of water when the lavatory is not in use. **(Article 6.2.6.2-2)**	✓		

Piping	Met	Not met	Not Appl.
All hot service water piping in circulating systems, non-circulating systems without heat traps, and non-circulating systems with electric heat-tracing elements along the pipes must be insulated in accordance with **MNECB Table 6.2.3.1 and Sentences 6.2.3.1 (2) to (4)**.	✓		

Systems with more than one End-Use Design Temperature	Met	Not met	Not Appl.
When less than 50% of the total design flow of a service water heating system has a design discharge temperature higher than 60°C, separate remote heaters or booster heaters are required for those portions of the system with a design temperature higher than 60°C. **(Article 6.2.5.1)**			✓

Swimming Pools	Met	Not met	Not Appl.
Pool heaters must be equipped with a readily accessible and clearly labelled device to start and stop the heater without adjusting the thermostat setting and, where applicable, without relighting the pilot light. **(Article 6.2.7.1-1)**			
Except for pumps required by public health standards to operate continuously and pumps required to operate solar or waste heat recovery pool heating systems, swimming pool heaters must have time switches or other controls that can be set to automatically turn off pumps and heaters when their operation is not required. **(Article 6.2.7.1-2)**			
Except for pools deriving more than 60% of their pool-heating energy from site-recovered energy or site solar energy, heated outdoor and indoor swimming pools must be equipped with pool covers. In the case of pool temperatures above 32°C, the cover must have an RSI-value of at least 2.1. **(Article 6.2.7.2-1/3)**			

Notes: _____

LIGHTING

Lighting Designer's Signature _____

Lighting Design Intent	Met	Not met	Not Appl.
Lighting design documentation conforms to **Article 4.2.6.1**	✓		

Exterior Lighting	Met	Not met	Not Appl.
Exterior entrances/exits, unless high-risk security areas, must meet the requirements of MNECB Table 4.2.1.2. Blending of power for all entrance/exits is permitted. **(Article 4.2.1.2-2)**	✓		
Façade lighting power must be less than 2.4 W/m2 of face area. **(Article 4.2.1.3-1)**	✓		
Other exterior lighting, unless exempt, must have a luminous efficacy greater than 60 lm/W. **(Article 4.2.1.1)**	✓		

Exterior Lighting Controls	Met	Not met	Not Appl.
Except for exterior lighting for 24-hour use, or outdoor sports facilities, exterior lighting must be controlled by programmable schedule controllers or photocells. **(Article 4.2.2.1-1)**	✓		

Interior Lighting	Met	Not met	Not Appl.
Exit sign power must be less than 22W. **(Article 4.2.3.1)**	✓		

Interior Lighting Controls	Met	Not met	Not Appl.
Controls are required to provide lower lighting levels at night for office spaces with the following characteristics (Article 4.2.4.2-1):			
Area greater than 40 m^2			✓
Enclosed wall or ceiling-height partitions.			✓
Where connected lighting exceeds 12 W/m^2.			✓

The required night light fixtures must meet the following (Article 4.2.4.2-3):			
Not more than one fixture per 40 m^2.			✓
An average lighting level greater than 10 lx.			✓
At least one fixture controlled separately from the remaining fixtures.			✓
Controls may be centralized if (Article 4.2.4.3-2):			
Controls are automatic or programmable.			✓
For safety reasons, lights are under control of staff or building management.			✓
Such controls, except in dwelling units, must have identification showing the lighted areas controlled. **(Article 4.2.4.3)**			✓
Unless continuously lit, each space enclosed by walls or ceiling-height partitions must have controls (at least one per circuit) capable of turning off hard-wired lights in the space. **(Article 4.2.4.1-3)**			✓
Task lighting (not in the ceiling) must have a switch near the work station. **(Article 4.2.4.3-3)**			✓
Hotel guest rooms must be provided with a master switch at the entrance to the room for all permanently wired lighting fixtures and receptacles, except those in the bathroom. **(Article 4.2.4.4)**			✓

Notes: _____

ELECTRICAL

Electrical Professional's Signature _____

Electrical Distribution System Monitoring	Met	Not met	Not Appl.
Unless exempted, dwelling units and suites having all electrical loads supplied by a feeder to only that suite must be individually metered to billing accuracy. **(Article 7.2.1.1-1)**	✓		
Electrical distribution systems with load carrying capacity of greater than 250 kV A must be designed to facilitate the installation of a system to monitor the electrical consumption of (Article 7.2.1.2-1/2):			
Tenants with connected loads greater than 100 kV A.			✓
Services, appliances, or equipment serving storeys greater than 1000 m^2 and intended to be used as office space.			✓
Electrical power feeders for hard-wired lighting, HVAC systems and equipment serving multiple tenants, service water heating, elevators, and any special equipment or systems of more than 20 kW.			✓

Power Receptacles	Met	Not met	Not Appl.
Where exterior power receptacles are provided, at least one must be controlled from indoors. **(Article 7.2.2.1-1)**			✓
Where power receptacles are provided for indoor/outdoor parking and are supplied through a panel board serving a suite, they must be controlled by switches or timers accessible only to the tenants of the suite. **(Article 7.2.2.1-2)**			✓

Transformers	Met	Not met	Not Appl.
Transformers and their power loss characteristics must comply with the relevant appliance or equipment efficiency act, or CAN/CSA-C802 if the transformer falls within the scope of that standard. **(Article 7.2.3.1)**	✓		

Electrical Motors	Met	Not met	Not Appl.
Permanently wired polyphase motors must comply with the relevant appliance or equipment efficiency act, or CAN/CSA-C390 Article 4.10. **(Article7.2.4.2-1)**	✓		

Nameplates must list the nominal full-load motor efficiency. **(Article7.2.4.2-3)**	✓		

Notes: _____

Design Team

Architect

Name:		Company:	
Phone:	Fax:	E-mail:	
Street Address:			
City / Province or Territory:		Postal Code:	

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Electrical Professional

Name:	Sunanda Perera	Company:	MCW Consultants Ltd.
Phone:	(416) 598-2920 Fax: (416) 598-5394	E-mail:	sperera@mcw.com
Street Address:	207 Queen's Quay West		
City / Province or Territory:	Toronto/Ontario	Postal Code:	M5J1A7

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Mechanical Professional

Name:	Michael Hunter	Company:	MCW Consultants Ltd.
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Lighting Designer

Name:	Sunanda Perera	Company:	MCW Consultants Ltd.
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City / Province or Territory:	Toronto	Postal Code:	M5J1A7

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Simulation Professional

Name:		Company:	
Phone:	Fax:	E-mail:	
Street Address:			
City / Province or Territory:		Postal Code:	

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ONTARIO BUILDING CODE AND SUPPLEMENTARY STANDARD SB-10 DETAILED FORMS
PROJECT INFORMATION

Project: AQUAVISTA	Location: 263 Queens Quay East
Building Permit Application No.:	Date:

Architectural Designer Information*	Mechanical Designer Information*	Electrical Designer Information*
	Michael Hunter	Sunanda Perera
Name	Name	Name
	207 Queens Quay West, Suite 615	207 Queens Quay West, Suite 615
Address	Address	Address
	Toronto Ontario	Toronto Ontario
City Province	City Province	City Province
	15/04/30	15/04/30
Signature Date(YY/MM/DD)	Signature Date(YY/MM/DD)	Signature Date(YY/MM/DD)

*IF MORE DESIGNERS ARE INVOLVED, PROVIDE ADDITIONAL COPIES OF THIS FORM.

THIS CHECKLIST IS A CONVENIENCE DOCUMENT ONLY AND IS BASED ON THE ENERGY EFFICIENCY REQUIREMENTS DESCRIBED IN THE ONTARIO BUILDING CODE SUPPLEMENTARY STANDARD SB-10 DIVISION 2. THIS CHECKLIST IS NOT A SUBSTITUTE FOR COMPLYING WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE. WHILE CARE HAS BEEN TAKEN TO ENSURE ACCURACY OF THIS CHECKLIST, DESIGNERS AND BUILDING OFFICIALS MUST REFER TO THE ACTUAL WORDING AND REQUIREMENTS OF THE ONTARIO BUILDING CODE (O.REG. 332/12 AND AMENDMENTS UP TO DECEMBER 23, 2013).

THIS CHECKLIST IS MADE AVAILABLE FOR CODE USERS BY THE MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING. USERS SHOULD ALWAYS CONSULT WITH THE AUTHORITY HAVING JURISDICTION, IF THE CHECKLIST IS GOING TO BE SUBMITTED TO THAT AUTHORITY. THE MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING DOES NOT ASSUME RESPONSIBILITY FOR ERRORS OR OVERSIGHTS RESULTING FROM THE INFORMATION CONTAINED HEREIN.

PLEASE FILL IN THE ACTUAL VALUES INSTALLED AND CHECK BOXES AS THEY APPLY.

OBC SB-10 COMPLIANCE SUMMARY

Energy Efficiency Design:

There are four energy compliance options to meet the requirements of OBC SB-10 Division 2. Please select the conformance option selected for this project. The energy efficiency of all buildings must be designed to:

Compliance Path		Forms to Complete
(A-1) Exceed by not less than 25% the energy efficiency levels attained by conforming to the CCBFC, "Model National Energy Code for Buildings (MNECB)." ***Note that this compliance path requires that the proposed building is shown to consume at least 25% less energy than the MNECB reference building when modelled according to the procedures outlined in Part 8 of the MNECB.***	☑ YES	FORM A
(A-2) Exceed by not less than 5% the energy efficiency levels attained by conforming to the ANSI/ASHRAE/IESNA 90.1 - 2010 "Energy Standard for Buildings Except Low-Rise Residential Buildings." ***Note that this compliance path requires that the proposed building is shown to consume at least 5% less energy than the ASHRAE 90.1-2010 reference building when modelled according to the procedures outlined in Chapter 11 of ASHRAE 90.1-2010.*** ***Note that this path cannot be used for a building with electric space heating. Refer to SB-10.***	☐ YES	FORM A
(B) Achieve the energy efficiency levels attained by conforming to the ASHRAE 90.1-2010, "Energy Standard for Buildings Except Low-Rise Residential Buildings" and Division 2 of SB-10. ***This compliance path includes both prescriptive and performance path options. Please proceed to Form B.***	☐ YES	FORM B
(C) Achieve the energy efficiency levels attained by conforming to the NECB-2011 National Energy Code of Canada for Buildings and Division 2 of SB-10. ***This compliance path includes both prescriptive and performance path options. Please proceed to NECB Forms***	☐ YES	NECB Forms

Print Reset Form

TORONTO

Data Sheet

Plumbing Data Sheet

All plumbing, drainage and venting piping shall conform to Ontario Regulation 332/12, OBC part 7

Date (yyyy-mm-dd)	Folder No.
2015-05-01	

Project Information

Street No.	Street Name		
263	Queen's Quay East		
City/Town		Province	Postal Code
Toronto		Ontario	
Project Description			No. of Floors
Mixed Use Condominium			13

Fixtures Information

Fixture Types	Below Ground	Ground	Second	Third	Typical	Top	Other	Totals
Kitchen Sinks			28	31		5	249	313
Dishwashers			28	31		5	249	313
Wash Basins (Lav's)	4	3	55	49		9	449	569
Bath Tubs			26	26		1	206	259
Showers	4		18	20		2	185	229
Water Closets	3	4	48	46		8	401	510
Urinals / Bidets	2							2
Washing Machines			28	31			249	308
Laundry Tubs							15	15
Vented Traps	15							15
Floor Drains / Hub Drains	115	40	6			15		176
Slop Sinks		1	1				1	3
Drinking Fountains								0
Hot Water Tanks	3							3
Other Sinks							12	12
Bar Sinks								0
Miscellaneous								0
Totals	146	48	238	234	0	45	2016	2727

Total Number of Fixtures: 2727

Continue on next page

311 toronto at your service

Plumbing Data Sheet

Underground Services Information

Underground Services	Inside		Outside		Total Length
	Size	Length	Size	Length	
Domestic Water Service			150mm	1000mm	1000
Fire Line			200mm	1000mm	1000
Sanitary Piping			250mm	1000mm	1000
Storm Piping			300mm	1000mm	1000
Total Underground Services:					

Miscellaneous Information

Miscellaneous	Number
Catch Basins	10
Interceptors	1
Manholes	
Sump Pumps	14
Backflow Devices (Testable)	4
Total Miscellaneous: 29.00	

HEATING AND COOLING LOAD CALCULATIONS

for

AQUAVISTA BAYSIDE
263 QUEEN'S QUAY EAST, TORONTO, ONTARIO

Prepared for:

TRIDEL
4800 Dufferin Street,
Toronto, Ontario,
M3H 5S9

Prepared by:

MCW Consultants Ltd.
207 Queen's Quay West
Suite 615
Toronto, Ontario
M5J 1A7

MCW Consultants Ltd.

Dated: April, 2015
MCW File No. 8489D
Revision: 0

Air System Sizing Summary for Condo 4 Pipe

Project Name: 8489d-Aquavista Permit
Prepared by: MCW Consultants Ltd.

04/17/2015
01:35PM

Air System Information

Air System Name	**Condo 4 Pipe**	Number of zones	**13**	
Equipment Class	**TERM**	Floor Area	**217649.5**	ft²
Air System Type	**4P-FC**	Location	**Toronto, Ontario**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Sum of space airflow rates**	Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**	Sizing Data	**Calculated**

Cooling Coil Sizing Data

Total coil load	**53.4**	Tons	Load occurs at	**Jul 1500**	
Total coil load	**641.0**	MBH	OA DB / WB	**87.0 / 71.0**	°F
Sensible coil load	**641.0**	MBH	Entering DB / WB	**87.0 / 71.0**	°F
Coil CFM at Jul 1500	**31714**	CFM	Leaving DB / WB	**67.9 / 65.2**	°F
Max coil CFM	**31714**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**1.000**				
Water flow @ 10.0 °F rise	**128.26**	gpm			

Heating Coil Sizing Data

Max coil load	**2412.5**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**31714**	CFM	Ent. DB / Lvg DB	**-4.0 / 67.9**	°F
Max coil CFM	**31714**	CFM			
Water flow @ 20.0 °F drop	**241.38**	gpm			

Ventilation Fan Sizing Data

Actual max CFM	**31714**	CFM	Fan motor BHP	**26.06**	BHP
Standard CFM	**31069**	CFM	Fan motor kW	**20.67**	kW
Actual max CFM/ft²	**0.15**	CFM/ft²	Fan static	**3.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**31714**	CFM	CFM/person	**41.51**	CFM/person
CFM/ft²	**0.15**	CFM/ft²			

Zone Sizing Summary for Condo 4 Pipe

Project Name: 8489d-Aquavista Permit
Prepared by: MCW Consultants Ltd.

04/17/2015
01:35PM

Air System Information

Air System Name ..... **Condo 4 Pipe**
Equipment Class ..... **TERM**
Air System Type **4P-FC**

Number of zones **13**
Floor Area ..... **217649.5** ft²
Location ..... **Toronto, Ontario**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM ..... **Sum of space airflow rates**
Space CFM ..... **Individual peak space loads**

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Air Flow (CFM)	Minimum Air Flow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft²)	Zone CFM/ft²
Zone 1	95.3	4505	4505	Jul 1500	15.6	4133.0	1.09
Zone 2	119.3	5660	5660	Jul 1700	54.8	5165.6	1.10
Zone 3	194.9	10973	9987	Aug 1400	176.9	16351.6	0.67
Zone 4	218.4	11644	11178	Aug 1400	183.1	16783.1	0.69
Zone 5	227.7	12538	11712	Aug 1400	198.4	19412.9	0.65
Zone 6	227.7	12538	11712	Aug 1400	198.4	19412.9	0.65
Zone 7	256.0	13945	13119	Aug 1400	237.4	19439.4	0.72
Zone 8	200.2	10993	10247	Aug 1400	185.1	15792.7	0.70
Zone 9	201.3	11063	10317	Aug 1400	185.9	15798.7	0.70
Zone 10	218.7	11904	11265	Aug 1400	207.5	15798.7	0.75
Zone 11	318.3	17926	16799	Aug 1500	311.4	24460.3	0.73
Zone 12	266.3	14787	14028	Aug 1500	263.8	20719.4	0.71
Zone 13	409.7	21943	21309	Aug 1500	443.4	24381.2	0.90

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (MBH)	Sens Coil Load (MBH)	Coil Entering DB / WB (°F)	Coil Leaving DB / WB (°F)	Water Flow @ 10.0 °F (gpm)	Time of Peak Load
Zone 1	119.3	79.7	73.3 / 64.6	55.0 / 54.6	23.87	Jul 1500
Zone 2	154.5	95.7	72.6 / 64.9	55.0 / 54.7	30.92	Jul 1700
Zone 3	230.4	176.2	75.0 / 64.0	55.0 / 54.5	46.10	Aug 1400
Zone 4	255.2	199.4	75.2 / 63.9	55.0 / 54.5	51.06	Aug 1400
Zone 5	268.0	207.1	75.1 / 64.0	55.0 / 54.5	53.63	Aug 1400
Zone 6	268.0	207.1	75.1 / 64.0	55.0 / 54.5	53.63	Aug 1400
Zone 7	295.9	233.7	75.2 / 63.8	55.0 / 54.5	59.21	Aug 1400
Zone 8	233.5	182.4	75.1 / 63.9	55.0 / 54.5	46.72	Aug 1400
Zone 9	234.8	183.4	75.1 / 63.9	55.0 / 54.5	46.98	Aug 1400
Zone 10	252.3	200.1	75.2 / 63.8	55.0 / 54.5	50.49	Aug 1400
Zone 11	368.9	291.1	75.2 / 63.8	55.0 / 54.5	73.82	Aug 1500
Zone 12	307.6	244.8	75.3 / 63.8	55.0 / 54.5	61.55	Aug 1500
Zone 13	454.1	381.2	75.7 / 63.5	55.0 / 54.4	90.88	Aug 1500

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (°F)	Htg Coil Water Flow @20.0 °F (gpm)	Fan Design AirFlow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design AirFlow (CFM)
Zone 1	15.1	70.1 / 95.0	1.51	4505	0.267	0.211	2248
Zone 2	53.2	70.0 / 95.0	5.32	5660	0.335	0.266	3500
Zone 3	172.2	69.4 / 95.0	17.23	10973	0.649	0.515	2348
Zone 4	178.7	69.5 / 95.0	17.88	11644	0.689	0.546	2234

Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (°F)	Htg Coil Water Flow @20.0 °F (gpm)	Fan Design AirFlow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design AirFlow (CFM)
Zone 5	193.4	69.4 / 95.0	19.36	12538	0.742	0.588	2432
Zone 6	193.4	69.4 / 95.0	19.36	12538	0.742	0.588	2432
Zone 7	231.4	69.4 / 95.0	23.15	13945	0.825	0.654	2433
Zone 8	180.4	69.4 / 95.0	18.05	10993	0.650	0.516	2064
Zone 9	181.1	69.4 / 95.0	18.12	11063	0.654	0.519	2085
Zone 10	202.2	69.3 / 95.0	20.23	11904	0.704	0.559	2085
Zone 11	303.4	69.3 / 95.0	30.36	17926	1.060	0.841	3122
Zone 12	257.2	69.3 / 95.0	25.73	14787	0.875	0.694	2337
Zone 13	432.2	69.2 / 95.0	43.24	21943	1.298	1.030	2395

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
RS AMENITY P1	1	95.3	Jul 1500	4505	15.6	4133.0	1.09
Zone 2							
RS EAST CON.VES	1	40.3	Jul 1600	1904	27.5	1055.6	1.80
RS WEST CON.VES	1	79.5	Aug 1600	3756	27.4	4110.0	0.91
Zone 3							
RS-02-NE CORRIDOR	1	2.8	Jan 2300	640	0.0	1043.0	0.61
RS-02-SW CORRIDOR	1	2.5	Jan 2300	600	0.0	926.0	0.65
RS2A-01-1BD+D	1	9.9	Sep 1400	466	7.9	637.3	0.73
RS2B-02-1BD+D	1	9.8	Sep 1400	462	7.9	620.9	0.74
RS2C-03-2BD	1	20.0	Aug 1400	944	19.6	1255.4	0.75
RS2D-04-1BD+D	1	8.8	Jul 0900	414	7.1	680.2	0.61
RS2E-05-2BD	1	13.8	Jul 1000	651	11.2	1226.6	0.53
RS2G-07-2BD+D	1	12.3	Jul 0900	583	9.4	971.6	0.60
RS2GS-1BD	1	3.3	Jul 1000	157	2.9	214.3	0.73
RS2L-11-1BD	1	9.0	Sep 1400	426	6.5	470.5	0.90
RS2M-12-2BD+D	1	14.5	Sep 1400	685	10.1	1094.8	0.63
RS2P-13-1BD	1	11.0	Sep 1400	520	8.1	779.6	0.67
RS2Q-15-2BD	1	13.8	Sep 1400	650	10.2	858.3	0.76
RS2R-16-2BD	1	20.7	Aug 1400	976	20.4	1228.8	0.79
RS2S-17-2BD+D	1	11.9	Jul 1000	564	11.3	977.4	0.58
RS2T-18-1BD+D	1	8.8	Jul 1000	415	8.2	697.4	0.60
RS2U-19-1BD+D	1	8.7	Jul 1000	413	8.1	677.5	0.61
RS2V-20-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS2W-21-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS2X-22-1BD	1	11.1	Jul 1600	529	14.0	605.9	0.87
RS2Y-23-1BD	1	7.3	Jul 1700	344	5.9	403.5	0.85
Zone 4							
RS-03-NE CORRIDOR	1	2.8	Jan 2300	600	0.0	1043.0	0.58
RS-03-SW CORRIDOR	1	18.3	Jan 2300	866	0.0	926.0	0.94
RS3A-01-1BD+D	1	9.9	Sep 1400	466	7.9	637.3	0.73
RS3B-02-1BD+D	1	9.8	Sep 1400	462	7.9	620.9	0.74
RS3C-03-2BD	1	20.0	Aug 1400	944	19.6	1255.4	0.75
RS3D-04-1BD+D	1	8.8	Jul 0900	414	7.1	680.2	0.61
RS3E-05-2BD	1	8.9	Jul 0900	422	7.5	662.9	0.64
RS3F-06-2BD	1	9.0	Jul 0900	425	7.3	678.8	0.63
RS3G-07-2BD	1	9.0	Jul 0900	425	6.7	678.8	0.63
RS3H-08-1BD+D	1	6.9	Jul 0900	327	5.0	593.7	0.55
RS3L-11-1BD	1	9.4	Sep 1400	443	6.5	551.6	0.80
RS3M-12-2BD	1	10.5	Sep 1400	496	6.7	740.6	0.67
RS3N-13-1BD	1	9.9	Sep 1400	468	7.3	655.1	0.71

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft^2)	Space CFM/ft^2
RS3P-14-1BD+D	1	9.8	Sep 1400	462	7.3	627.4	0.74
RS3Q-15-2BD	1	13.8	Sep 1400	650	10.2	858.3	0.76
RS3R-16-2BD	1	20.7	Aug 1400	976	20.4	1228.8	0.79
RS3S-17-2BD+D	1	11.9	Jul 1000	564	11.3	977.4	0.58
RS3T-18-1BD+D	1	8.8	Jul 1000	415	8.2	697.4	0.60
RS3U-19-1BD+D	1	8.7	Jul 1000	413	8.1	677.5	0.61
RS3V-20-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS3W-21-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS3X-22-1BD	1	11.1	Jul 1600	529	14.0	605.9	0.87
RS3Y-23-1BD	1	7.3	Jul 1700	344	5.9	403.5	0.85
Zone 5							
RS-04-NE CORRIDOR	1	2.8	Jan 2300	600	0.0	1043.0	0.58
RS-04-SW CORRIDOR	1	2.5	Jan 2300	480	0.0	926.0	0.52
RS4A-01-1BD+D	1	9.9	Sep 1400	466	7.9	637.3	0.73
RS4B-02-1BD+D	1	9.8	Sep 1400	462	7.9	620.9	0.74
RS4C-03-2BD	1	20.0	Aug 1400	944	19.6	1255.4	0.75
RS4D-04-1BD+D	1	8.8	Jul 0900	414	7.1	680.2	0.61
RS4E-05-2BD	1	8.9	Jul 0900	422	7.5	662.9	0.64
RS4F-06-2BD	1	9.0	Jul 0900	425	7.3	678.8	0.63
RS4G-07-2BD	1	9.0	Jul 0900	425	6.7	678.8	0.63
RS4H-08-1BD+D	1	6.9	Jul 0900	327	5.0	593.7	0.55
RS4J-09-2BD	1	13.1	Jul 0900	619	7.6	1307.8	0.47
RS4K-10-2BD	1	14.0	Sep 1300	662	7.6	1322.0	0.50
RS4L-11-1BD	1	9.4	Sep 1400	443	6.5	551.6	0.80
RS4M-12-2BD	1	10.5	Sep 1400	496	6.7	740.6	0.67
RS4N-13-1BD	1	9.9	Sep 1400	468	7.3	655.1	0.71
RS4P-14-1BD+D	1	9.8	Sep 1400	462	7.3	627.4	0.74
RS4Q-15-2BD	1	13.8	Sep 1400	650	10.2	858.3	0.76
RS4R-16-2BD	1	20.7	Aug 1400	976	20.4	1228.8	0.79
RS4S-17-2BD+D	1	11.9	Jul 1000	564	11.3	977.4	0.58
RS4T-18-1BD+D	1	8.8	Jul 1000	415	8.2	697.4	0.60
RS4U-19-1BD+D	1	8.7	Jul 1000	413	8.1	677.5	0.61
RS4V-20-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS4W-21-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS4X-22-1BD	1	11.1	Jul 1600	529	14.0	605.9	0.87
RS4Y-23-1BD	1	7.3	Jul 1700	344	5.9	403.5	0.85
Zone 6							
RS-05-NE CORRIDOR	1	2.8	Jan 2300	600	0.0	1043.0	0.58
RS-05-SW CORRIDOR	1	2.5	Jan 2300	480	0.0	926.0	0.52
RS5A-01-1BD+D	1	9.9	Sep 1400	466	7.9	637.3	0.73
RS5B-02-1BD+D	1	9.8	Sep 1400	462	7.9	620.9	0.74
RS5C-03-2BD	1	20.0	Aug 1400	944	19.6	1255.4	0.75
RS5D-04-1BD+D	1	8.8	Jul 0900	414	7.1	680.2	0.61
RS5E-05-2BD	1	8.9	Jul 0900	422	7.5	662.9	0.64
RS5F-06-2BD	1	9.0	Jul 0900	425	7.3	678.8	0.63
RS5G-07-2BD	1	9.0	Jul 0900	425	6.7	678.8	0.63
RS5H-08-1BD+D	1	6.9	Jul 0900	327	5.0	593.7	0.55
RS5J-09-2BD	1	13.1	Jul 0900	619	7.6	1307.8	0.47
RS5K-10-2BD	1	14.0	Sep 1300	662	7.6	1322.0	0.50
RS5L-11-1BD	1	9.4	Sep 1400	443	6.5	551.6	0.80
RS5M-12-2BD	1	10.5	Sep 1400	496	6.7	740.6	0.67
RS5N-13-1BD	1	9.9	Sep 1400	468	7.3	655.1	0.71
RS5P-14-1BD+D	1	9.8	Sep 1400	462	7.3	627.4	0.74
RS5Q-15-2BD	1	13.8	Sep 1400	650	10.2	858.3	0.76
RS5R-16-2BD	1	20.7	Aug 1400	976	20.4	1228.8	0.79
RS5S-17-2BD+D	1	11.9	Jul 1000	564	11.3	977.4	0.58
RS5T-18-1BD+D	1	8.8	Jul 1000	415	8.2	697.4	0.60

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft^2)	Space CFM/ft^2
RS5U-19-1BD+D	1	8.7	Jul 1000	413	8.1	677.5	0.61
RS5V-20-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS5W-21-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS5X-22-1BD	1	11.1	Jul 1600	529	14.0	605.9	0.87
RS5Y-23-1BD	1	7.3	Jul 1700	344	5.9	403.5	0.85
Zone 7							
RS-06-NE CORRIDOR	1	2.8	Jan 2300	600	0.0	1043.0	0.58
RS-06-SW CORRIDOR	1	2.5	Jan 2300	480	0.0	926.0	0.52
RS6A-01-1BD+D	1	10.7	Sep 1400	506	8.8	637.3	0.79
RS6B-02-1BD+D	1	10.6	Sep 1400	502	8.8	620.9	0.81
RS6C-03-2BD	1	24.8	Aug 1400	1173	26.1	1255.4	0.93
RS6D-04-1BD+D	1	10.0	Jul 1000	472	9.0	680.2	0.69
RS6E-05-2BD	1	9.6	Jul 1000	456	8.5	662.9	0.69
RS6F-06-2BD	1	10.1	Jul 1000	476	9.1	678.8	0.70
RS6G-07-2BD	1	10.0	Jul 1000	470	8.1	678.8	0.69
RS6H-08-1BD+D	1	7.7	Jul 1000	362	6.0	593.7	0.61
RS6J-09-2BD	1	14.1	Jul 1000	666	8.9	1307.8	0.51
RS6K-10-2B	1	15.2	Sep 1300	717	9.0	1322.0	0.54
RS6L-11-1BD	1	10.4	Sep 1400	493	7.7	551.6	0.89
RS6M-12-2BD	1	11.6	Sep 1400	550	8.1	740.6	0.74
RS6N-13-1BD	1	11.1	Sep 1400	526	8.9	655.1	0.80
RS6P-14-1BD+D	1	11.2	Sep 1400	529	9.0	653.9	0.81
RS6Q-15-2BD	1	15.8	Sep 1400	748	13.1	858.3	0.87
RS6R-16-2BD	1	25.0	Aug 1400	1183	26.2	1228.8	0.96
RS6S-17-2BD+D	1	12.8	Jul 1000	604	12.7	977.4	0.62
RS6T-18-1BD+D	1	9.5	Jul 1000	447	9.1	697.4	0.64
RS6U-19-1BD+D	1	9.4	Jul 1000	445	9.1	677.5	0.66
RS6V-20-1BD	1	6.0	Jul 0900	285	4.5	491.3	0.58
RS6W-21-1BD	1	6.0	Jul 0900	285	4.5	491.3	0.58
RS6X-22-1BD	1	12.2	Jul 1600	593	15.7	605.9	0.98
RS6Y-23-1BD	1	7.9	Jul 1700	374	6.6	403.5	0.93
Zone 8							
RS-07-NE CORRIDOR	1	2.8	Jan 2300	600	0.0	1043.0	0.58
RS-07-SW CORRIDOR	1	2.5	Jan 2300	400	0.0	926.0	0.43
RS7A-01-1BD+D	1	9.9	Sep 1400	466	7.9	637.3	0.73
RS7B-03-2BD	1	22.1	Aug 1400	1043	22.7	1255.4	0.83
RS7C-05-2B	1	11.0	Jul 1000	521	10.9	735.2	0.71
RS7D-06-1BD	1	8.0	Jul 0900	376	7.1	499.5	0.75
RS7E-07-1BD	1	8.3	Jul 0900	393	6.6	582.0	0.68
RS7F-08-1BD	1	7.7	Jul 1000	362	6.7	579.4	0.62
RS7G-09-2BD	1	13.0	Jul 0900	614	8.2	1169.0	0.53
RS7H-10-2BD+D	1	14.4	Sep 1300	678	8.2	1258.5	0.54
RS7J-11-1BD	1	8.2	Sep 1400	389	6.7	475.3	0.82
RS7K-12-1BD+D	1	9.5	Sep 1400	451	6.6	581.7	0.78
RS7L-13-1BD	1	9.1	Sep 1400	431	7.1	482.0	0.89
RS7N-16-2BD+D	1	39.2	Sep 1400	1852	37.1	2201.5	0.84
RS7P-18-2BD	1	12.6	Jul 1000	597	13.2	697.4	0.86
RS7U-19-1BD+D	1	8.7	Jul 1000	413	8.1	677.5	0.61
RS7V-20-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS7W-21-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS7X-22-1BD	1	11.1	Jul 1600	529	14.0	605.9	0.87
RS7Y-23-1BD	1	7.3	Jul 1700	344	5.9	403.5	0.85
Zone 9							
RS-08-NE CORRIDOR	1	2.8	Jan 2300	600	0.0	1043.0	0.58
RS-08-SW CORRIDOR	1	2.5	Jan 2300	400	0.0	926.0	0.43
RS8A-01-1BD+D	1	9.9	Sep 1400	466	7.9	637.3	0.73
RS8B-03-2BD	1	22.1	Aug 1400	1043	22.7	1255.4	0.83

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft^2)	Space CFM/ft^2
RS8C-05-2B	1	11.0	Jul 1000	521	10.9	735.2	0.71
RS8D-06-1BD	1	8.0	Jul 0900	376	7.1	499.5	0.75
RS8E-07-1BD	1	8.3	Jul 0900	393	6.6	582.0	0.68
RS8F-08-1BD	1	7.7	Jul 1000	362	6.7	579.4	0.62
RS8G-09-2BD	1	13.0	Jul 0900	614	8.2	1169.0	0.53
RS8H-10-2BD+D	1	14.4	Sep 1300	678	8.2	1258.5	0.54
RS8J-11-1BD	1	8.2	Sep 1400	389	6.7	475.3	0.82
RS8K-12-1BD+D	1	9.5	Sep 1400	451	6.6	581.7	0.78
RS8L-13-1BD	1	9.1	Sep 1400	431	7.1	482.0	0.89
RS8M-15-2BD	1	17.5	Sep 1400	825	14.2	910.0	0.91
RS8N-16-2BD+D	1	23.2	Aug 1400	1097	23.7	1297.5	0.85
RS8P-18-2BD	1	12.6	Jul 1000	597	13.2	697.4	0.86
RS8U-19-1BD+D	1	8.7	Jul 1000	413	8.1	677.5	0.61
RS8V-20-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS8W-21-1BD	1	5.6	Jul 0900	267	4.0	491.3	0.54
RS8X-22-1BD	1	11.1	Jul 1600	529	14.0	605.9	0.87
RS8Y-23-1BD	1	7.3	Jul 1700	344	5.9	403.5	0.85
Zone 10							
RS-09-NE CORRIDOR	1	5.1	Jan 2300	600	0.0	1043.0	0.58
RS-09-SW CORRIDOR	1	2.5	Jan 2300	400	0.0	926.0	0.43
RS9A-01-1BD+D	1	10.7	Sep 1400	506	8.8	637.3	0.79
RS9B-03-2BD	1	24.1	Aug 1400	1137	25.4	1255.4	0.91
RS9C-05-2B	1	11.9	Jul 1000	564	12.2	735.2	0.77
RS9D-06-1BD	1	8.6	Jul 0900	408	8.0	499.5	0.82
RS9E-07-1BD	1	9.0	Jul 0900	425	7.4	582.0	0.73
RS9F-08-1BD	1	7.7	Jul 1000	363	7.0	579.4	0.63
RS9G-09-2BD	1	13.9	Jul 0900	656	9.2	1169.0	0.56
RS9H-10-2BD+D	1	15.4	Sep 1300	726	9.2	1258.5	0.58
RS9J-11-1BD	1	9.0	Sep 1400	425	7.5	475.3	0.90
RS9K-12-1BD+D	1	10.4	Oct 1400	491	7.4	581.7	0.84
RS9L-13-1BD	1	10.0	Sep 1400	471	8.0	482.0	0.98
RS9M-15-2BD	1	19.1	Sep 1400	901	15.9	910.0	0.99
RS9N-16-2BD+D	1	25.3	Aug 1400	1198	26.5	1297.5	0.92
RS9P-18-2BD	1	13.7	Jul 1000	650	14.7	697.4	0.93
RS9U-19-1BD+D	1	9.4	Jul 1000	445	8.9	677.5	0.66
RS9V-20-1BD	1	6.0	Jul 0900	285	4.5	491.3	0.58
RS9W-21-1BD	1	6.0	Jul 0900	285	4.5	491.3	0.58
RS9X-22-1BD	1	12.2	Jul 1600	593	15.7	605.9	0.98
RS9Y-23-1BD	1	7.9	Jul 1700	374	6.6	403.5	0.93
Zone 11							
RS-10-NE CORRIDOR	1	3.3	Jan 2300	640	0.0	1215.0	0.53
RS-10-SW CORRIDOR	1	3.3	Jan 2300	800	0.0	1215.0	0.66
RS10A-01-1BD+D	1	10.7	Sep 1400	506	8.8	637.3	0.79
RS10AA-24-1BD	1	7.0	Jun 1700	329	6.0	521.0	0.63
RS10B-03-2BD	1	27.7	Aug 1400	1309	30.2	1255.4	1.04
RS10BB-25-1BD	1	6.7	Jun 1700	317	6.1	523.0	0.61
RS10C-05-2B	1	12.7	Jul 1000	602	13.6	735.2	0.82
RS10CC-26-1BD	1	6.0	Jun 1700	284	4.8	477.0	0.60
RS10D-06-1BD	1	8.9	Jul 1000	421	8.5	499.5	0.84
RS10DD-27-1BD	1	6.2	Jun 1700	294	5.0	466.0	0.63
RS10E-07-1BD	1	9.2	Jul 1000	434	7.8	582.0	0.75
RS10EE-28-1BD	1	6.0	Jun 1700	282	4.8	466.0	0.61
RS10F-08-1BD	1	7.8	Jul 1400	367	7.1	579.4	0.63
RS10FF-29-1BD	1	6.2	Jun 1700	295	5.0	472.0	0.62
RS10G-09-2BD	1	14.0	Jul 0900	660	9.4	1169.0	0.56
RS10GG-30-1BD+D	1	7.6	Jul 1700	358	6.1	586.0	0.61
RS10H-10-2BD+D	1	15.5	Sep 1300	732	9.4	1258.5	0.58

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft^2)	Space CFM/ft^2
RS10HH-31-1BD	1	7.1	Jun 1700	335	6.0	531.0	0.63
RS10J-11-1BD	1	9.1	Sep 1400	429	7.6	475.3	0.90
RS10JJ-32-1BD	1	8.0	Jun 1700	380	6.6	554.0	0.69
RS10K-12-1BD+D	1	10.6	Sep 1400	500	7.8	581.7	0.86
RS10KK-33-1BD	1	14.0	Sep 1500	660	13.9	643.0	1.03
RS10L-13-2BD	1	14.9	Sep 1400	705	12.3	852.0	0.83
RS10LL-34-1BD+D	1	10.7	Sep 1400	505	8.8	633.0	0.80
RS10MM-35-1BD+D	1	13.3	Sep 1400	627	10.0	789.0	0.80
RS10N-15-2BD+D	1	46.8	Aug 1400	2212	47.7	2763.0	0.80
RS10NN-36-1BD	1	10.7	Sep 1400	505	8.8	633.0	0.80
RS10U-19-2BD+D	1	19.0	Jul 1000	898	17.7	1356.0	0.66
RS10V-20-1BD	1	6.0	Jul 0900	285	4.5	491.3	0.58
RS10W-21-1BD	1	6.0	Jul 0900	285	4.5	491.3	0.58
RS10X-22-1BD	1	12.2	Jul 1600	593	15.7	605.9	0.98
RS10Y-23-1BD	1	7.9	Jul 1700	374	6.6	403.5	0.93
Zone 12							
RS-11-NE CORRIDOR	1	1.3	Jan 2300	400	0.0	470.0	0.85
RS-11-SW CORRIDOR	1	1.3	Jan 2300	480	0.0	470.0	1.02
RS11A-03-2BD+D	1	34.8	Aug 1400	1643	36.1	2378.0	0.69
RS11AA-24-1BD	1	7.0	Jun 1700	329	6.0	521.0	0.63
RS11B-07-2BD	1	24.0	Jul 1000	1134	22.8	1524.0	0.74
RS11BB-25-1BD	1	6.7	Jun 1700	317	6.1	523.0	0.61
RS11C-09-2BD	1	14.0	Jul 0900	662	9.6	1165.0	0.57
RS11CC-26-1BD	1	6.0	Jun 1700	284	4.8	477.0	0.60
RS11D-10-2BD	1	14.0	Jul 0900	662	9.6	1165.0	0.57
RS11DD-27-1BD	1	6.2	Jun 1700	294	5.0	466.0	0.63
RS11E-12-2BD+D	1	27.4	Sep 1400	1297	20.7	1499.0	0.87
RS11EE-28-1BD	1	6.0	Jun 1700	282	4.8	466.0	0.61
RS11F-16-3BD	1	40.1	Aug 1400	1895	41.4	2457.0	0.77
RS11FF-29-1BD	1	6.2	Jun 1700	295	5.0	472.0	0.62
RS11GG-30-1BD+D	1	7.6	Jul 1700	358	6.1	586.0	0.61
RS11H-18-2BD+D	1	21.2	Jul 1000	1004	18.0	1923.0	0.52
RS11HH-31-1BD	1	7.1	Jun 1700	335	6.0	531.0	0.63
RS11JJ-32-1BD	1	8.0	Jun 1700	380	6.6	554.0	0.69
RS11V-33-1BD	1	14.0	Sep 1500	660	13.9	643.0	1.03
RS11W-35-2BD	1	23.5	Sep 1400	1109	18.8	1420.0	0.78
RS11X-22-1BD	1	12.2	Jul 1600	593	15.7	605.9	0.98
RS11Y-23-1BD	1	7.9	Jul 1700	374	6.6	403.5	0.93
Zone 13							
RS-12-NE CORRIDOR	1	1.8	Jan 2300	400	0.0	646.1	0.62
RS-12-SW CORRIDOR	1	1.8	Jan 2300	400	0.0	646.1	0.62
RSPH1A-03-3BD+D	1	52.0	Aug 1400	2459	58.3	2804.0	0.88
RSPH1AA-24-1BD	1	8.2	Jun 1700	389	7.7	521.0	0.75
RSPH1B-07-2BD	1	25.8	Jul 1000	1220	26.8	1298.0	0.94
RSPH1BB-12-2BD+D DUPLEX	1	34.0	Sep 1400	1606	28.5	1507.0	1.07
RSPH1C-09-3BD+D DUPLEX	1	41.2	Jul 1600	1946	40.4	2912.0	0.67
RSPH1CC-10-2BD+D DUPLEX	1	41.3	Jul 1600	1950	41.5	2893.0	0.67
RSPH1D-31-1BD	1	15.3	Jun 1700	725	14.6	653.0	1.11
RSPH1DD-16-2BD DUPLEX	1	54.1	Aug 1400	2556	60.8	2467.0	1.04
RSPH1GG-18-2BD+D DUPLEX	1	24.5	Jul 1000	1158	23.3	1920.0	0.60
RSPH1JJ-32-1BD	1	9.6	Jun 1700	454	8.6	554.0	0.82
RSPH1V-33-1BD	1	17.4	Sep 1500	825	17.9	693.0	1.19
RSPH1X-22-1BD	1	15.3	Jul 1600	768	20.3	696.0	1.10
RSPH1Y-23-1BD	1	9.9	Jul 1700	468	8.6	462.0	1.01
RSPH2BB-12-2BD+D DUPLEX	1	25.7	Sep 1400	1213	19.2	1017.0	1.19
RSPH2C-09-3BD+D DUPLEX	1	22.2	Jul 1000	1051	21.8	859.0	1.22
RSPH2CC-10-3BD+D DUPLEX	1	18.8	Sep 1400	887	14.2	555.0	1.60

Zone Sizing Summary for Condo 4 Pipe

Project Name: 8489d-Aquavista Permit
Prepared by: MCW Consultants Ltd.

04/17/2015
01:35PM

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft^2)	Space CFM/ft^2
RSPH2DD-16-2BD DUPLEX	1	16.0	Aug 1400	758	17.7	428.0	1.77
RSPH2GG-18-2BD+D DUPLEX	1	15.0	Aug 1400	709	13.3	850.0	0.83

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **31714** CFM

2. Space Ventilation Analysis Table

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
RS AMENITY P1	1	4133.0	100.0	4505.2	20.00	0.06	0.0	0.0	2248.0
Zone 2									
RS EAST CON.VES	1	1055.6	30.0	1903.6	0.00	0.00	1500.0	0.0	1500.0
RS WEST CON.VES	1	4110.0	30.0	3756.0	0.00	0.00	2000.0	0.0	2000.0
Zone 3									
RS-02-NE CORRIDOR	1	1043.0	0.0	640.0	0.00	0.00	640.0	0.0	640.0
RS-02-SW CORRIDOR	1	926.0	0.0	600.0	0.00	0.00	600.0	0.0	600.0
RS2A-01-1BD+D	1	637.3	2.0	465.7	5.00	0.06	0.0	0.0	48.2
RS2B-02-1BD+D	1	620.9	2.0	462.3	5.00	0.06	0.0	0.0	47.3
RS2C-03-2BD	1	1255.4	4.0	944.2	5.00	0.06	0.0	0.0	95.3
RS2D-04-1BD+D	1	680.2	2.0	413.7	5.00	0.06	0.0	0.0	50.8
RS2E-05-2BD	1	1226.6	4.0	650.9	5.00	0.06	0.0	0.0	93.6
RS2G-07-2BD+D	1	971.6	3.0	583.3	5.00	0.06	0.0	0.0	73.3
RS2GS-1BD	1	214.3	2.0	157.1	5.00	0.06	0.0	0.0	22.9
RS2L-11-1BD	1	470.5	2.0	425.8	5.00	0.06	0.0	0.0	38.2
RS2M-12-2BD+D	1	1094.8	3.0	685.3	5.00	0.06	0.0	0.0	80.7
RS2P-13-1BD	1	779.6	2.0	520.2	5.00	0.06	0.0	0.0	56.8
RS2Q-15-2BD	1	858.3	3.0	649.9	5.00	0.06	0.0	0.0	66.5
RS2R-16-2BD	1	1228.8	4.0	976.0	5.00	0.06	0.0	0.0	93.7
RS2S-17-2BD+D	1	977.4	4.0	563.7	5.00	0.06	0.0	0.0	78.6
RS2T-18-1BD+D	1	697.4	2.0	415.2	5.00	0.06	0.0	0.0	51.8
RS2U-19-1BD+D	1	677.5	2.0	412.9	5.00	0.06	0.0	0.0	50.7
RS2V-20-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS2W-21-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS2X-22-1BD	1	605.9	2.0	529.4	5.00	0.06	0.0	0.0	46.4
RS2Y-23-1BD	1	403.5	2.0	344.1	5.00	0.06	0.0	0.0	34.2
Zone 4									
RS-03-NE CORRIDOR	1	1043.0	0.0	600.0	0.00	0.00	600.0	0.0	600.0
RS-03-SW CORRIDOR	1	926.0	0.0	866.0	0.00	0.00	480.0	0.0	480.0
RS3A-01-1BD+D	1	637.3	2.0	465.7	5.00	0.06	0.0	0.0	48.2
RS3B-02-1BD+D	1	620.9	2.0	462.3	5.00	0.06	0.0	0.0	47.3
RS3C-03-2BD	1	1255.4	4.0	944.2	5.00	0.06	0.0	0.0	95.3
RS3D-04-1BD+D	1	680.2	2.0	413.7	5.00	0.06	0.0	0.0	50.8
RS3E-05-2BD	1	662.9	3.0	421.6	5.00	0.06	0.0	0.0	54.8
RS3F-06-2BD	1	678.8	3.0	425.0	5.00	0.06	0.0	0.0	55.7
RS3G-07-2BD	1	678.8	3.0	424.9	5.00	0.06	0.0	0.0	55.7

RS3H-08-1BD+D	1	593.7	2.0	326.7	5.00	0.06	0.0	0.0	45.6
RS3L-11-1BD	1	551.6	2.0	442.8	5.00	0.06	0.0	0.0	43.1
RS3M-12-2BD	1	740.6	3.0	496.1	5.00	0.06	0.0	0.0	59.4
RS3N-13-1BD	1	655.1	2.0	467.7	5.00	0.06	0.0	0.0	49.3
RS3P-14-1BD+D	1	627.4	2.0	461.9	5.00	0.06	0.0	0.0	47.6
RS3Q-15-2BD	1	858.3	3.0	649.9	5.00	0.06	0.0	0.0	66.5
RS3R-16-2BD	1	1228.8	4.0	976.0	5.00	0.06	0.0	0.0	93.7
RS3S-17-2BD+D	1	977.4	4.0	563.7	5.00	0.06	0.0	0.0	78.6
RS3T-18-1BD+D	1	697.4	2.0	415.2	5.00	0.06	0.0	0.0	51.8
RS3U-19-1BD+D	1	677.5	2.0	412.9	5.00	0.06	0.0	0.0	50.7
RS3V-20-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS3W-21-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS3X-22-1BD	1	605.9	2.0	529.4	5.00	0.06	0.0	0.0	46.4
RS3Y-23-1BD	1	403.5	2.0	344.1	5.00	0.06	0.0	0.0	34.2
Zone 5									
RS-04-NE CORRIDOR	1	1043.0	0.0	600.0	0.00	0.00	600.0	0.0	600.0
RS-04-SW CORRIDOR	1	926.0	0.0	480.0	0.00	0.00	480.0	0.0	480.0
RS4A-01-1BD+D	1	637.3	2.0	465.7	5.00	0.06	0.0	0.0	48.2
RS4B-02-1BD+D	1	620.9	2.0	462.3	5.00	0.06	0.0	0.0	47.3
RS4C-03-2BD	1	1255.4	4.0	944.2	5.00	0.06	0.0	0.0	95.3
RS4D-04-1BD+D	1	680.2	2.0	413.7	5.00	0.06	0.0	0.0	50.8
RS4E-05-2BD	1	662.9	3.0	421.6	5.00	0.06	0.0	0.0	54.8
RS4F-06-2BD	1	678.8	3.0	425.0	5.00	0.06	0.0	0.0	55.7
RS4G-07-2BD	1	678.8	3.0	424.9	5.00	0.06	0.0	0.0	55.7
RS4H-08-1BD+D	1	593.7	2.0	326.7	5.00	0.06	0.0	0.0	45.6
RS4J-09-2BD	1	1307.8	4.0	618.7	5.00	0.06	0.0	0.0	98.5
RS4K-10-2BD	1	1322.0	4.0	661.8	5.00	0.06	0.0	0.0	99.3
RS4L-11-1BD	1	551.6	2.0	442.8	5.00	0.06	0.0	0.0	43.1
RS4M-12-2BD	1	740.6	3.0	496.1	5.00	0.06	0.0	0.0	59.4
RS4N-13-1BD	1	655.1	2.0	467.7	5.00	0.06	0.0	0.0	49.3
RS4P-14-1BD+D	1	627.4	2.0	461.9	5.00	0.06	0.0	0.0	47.6
RS4Q-15-2BD	1	858.3	3.0	649.9	5.00	0.06	0.0	0.0	66.5
RS4R-16-2BD	1	1228.8	4.0	976.0	5.00	0.06	0.0	0.0	93.7
RS4S-17-2BD+D	1	977.4	4.0	563.7	5.00	0.06	0.0	0.0	78.6
RS4T-18-1BD+D	1	697.4	2.0	415.2	5.00	0.06	0.0	0.0	51.8
RS4U-19-1BD+D	1	677.5	2.0	412.9	5.00	0.06	0.0	0.0	50.7
RS4V-20-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS4W-21-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS4X-22-1BD	1	605.9	2.0	529.4	5.00	0.06	0.0	0.0	46.4
RS4Y-23-1BD	1	403.5	2.0	344.1	5.00	0.06	0.0	0.0	34.2
Zone 6									
RS-05-NE CORRIDOR	1	1043.0	0.0	600.0	0.00	0.00	600.0	0.0	600.0
RS-05-SW CORRIDOR	1	926.0	0.0	480.0	0.00	0.00	480.0	0.0	480.0
RS5A-01-1BD+D	1	637.3	2.0	465.7	5.00	0.06	0.0	0.0	48.2

RS5B-02-1BD+D	1	620.9	2.0	462.3	5.00	0.06	0.0	0.0	47.3
RS5C-03-2BD	1	1255.4	4.0	944.2	5.00	0.06	0.0	0.0	95.3
RS5D-04-1BD+D	1	680.2	2.0	413.7	5.00	0.06	0.0	0.0	50.8
RS5E-05-2BD	1	662.9	3.0	421.6	5.00	0.06	0.0	0.0	54.8
RS5F-06-2BD	1	678.8	3.0	425.0	5.00	0.06	0.0	0.0	55.7
RS5G-07-2BD	1	678.8	3.0	424.9	5.00	0.06	0.0	0.0	55.7
RS5H-08-1BD+D	1	593.7	2.0	326.7	5.00	0.06	0.0	0.0	45.6
RS5J-09-2BD	1	1307.8	4.0	618.7	5.00	0.06	0.0	0.0	98.5
RS5K-10-2BD	1	1322.0	4.0	661.8	5.00	0.06	0.0	0.0	99.3
RS5L-11-1BD	1	551.6	2.0	442.8	5.00	0.06	0.0	0.0	43.1
RS5M-12-2BD	1	740.6	3.0	496.1	5.00	0.06	0.0	0.0	59.4
RS5N-13-1BD	1	655.1	2.0	467.7	5.00	0.06	0.0	0.0	49.3
RS5P-14-1BD+D	1	627.4	2.0	461.9	5.00	0.06	0.0	0.0	47.6
RS5Q-15-2BD	1	858.3	3.0	649.9	5.00	0.06	0.0	0.0	66.5
RS5R-16-2BD	1	1228.8	4.0	976.0	5.00	0.06	0.0	0.0	93.7
RS5S-17-2BD+D	1	977.4	4.0	563.7	5.00	0.06	0.0	0.0	78.6
RS5T-18-1BD+D	1	697.4	2.0	415.2	5.00	0.06	0.0	0.0	51.8
RS5U-19-1BD+D	1	677.5	2.0	412.9	5.00	0.06	0.0	0.0	50.7
RS5V-20-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS5W-21-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS5X-22-1BD	1	605.9	2.0	529.4	5.00	0.06	0.0	0.0	46.4
RS5Y-23-1BD	1	403.5	2.0	344.1	5.00	0.06	0.0	0.0	34.2
Zone 7									
RS-06-NE CORRIDOR	1	1043.0	0.0	600.0	0.00	0.00	600.0	0.0	600.0
RS-06-SW CORRIDOR	1	926.0	0.0	480.0	0.00	0.00	480.0	0.0	480.0
RS6A-01-1BD+D	1	637.3	2.0	505.7	5.00	0.06	0.0	0.0	48.2
RS6B-02-1BD+D	1	620.9	2.0	502.3	5.00	0.06	0.0	0.0	47.3
RS6C-03-2BD	1	1255.4	4.0	1173.4	5.00	0.06	0.0	0.0	95.3
RS6D-04-1BD+D	1	680.2	2.0	471.9	5.00	0.06	0.0	0.0	50.8
RS6E-05-2BD	1	662.9	3.0	455.9	5.00	0.06	0.0	0.0	54.8
RS6F-06-2BD	1	678.8	3.0	476.4	5.00	0.06	0.0	0.0	55.7
RS6G-07-2BD	1	678.8	3.0	470.4	5.00	0.06	0.0	0.0	55.7
RS6H-08-1BD+D	1	593.7	2.0	361.9	5.00	0.06	0.0	0.0	45.6
RS6J-09-2BD	1	1307.8	4.0	665.8	5.00	0.06	0.0	0.0	98.5
RS6K-10-2B	1	1322.0	4.0	717.5	5.00	0.06	0.0	0.0	99.3
RS6L-11-1BD	1	551.6	2.0	493.3	5.00	0.06	0.0	0.0	43.1
RS6M-12-2BD	1	740.6	3.0	549.7	5.00	0.06	0.0	0.0	59.4
RS6N-13-1BD	1	655.1	2.0	526.4	5.00	0.06	0.0	0.0	49.3
RS6P-14-1BD+D	1	653.9	2.0	528.8	5.00	0.06	0.0	0.0	49.2
RS6Q-15-2BD	1	858.3	3.0	748.4	5.00	0.06	0.0	0.0	66.5
RS6R-16-2BD	1	1228.8	4.0	1182.5	5.00	0.06	0.0	0.0	93.7
RS6S-17-2BD+D	1	977.4	4.0	604.4	5.00	0.06	0.0	0.0	78.6
RS6T-18-1BD+D	1	697.4	2.0	447.2	5.00	0.06	0.0	0.0	51.8
RS6U-19-1BD+D	1	677.5	2.0	445.2	5.00	0.06	0.0	0.0	50.7

RS6V-20-1BD	1	491.3	2.0	285.4	5.00	0.06	0.0	0.0	39.5
RS6W-21-1BD	1	491.3	2.0	285.4	5.00	0.06	0.0	0.0	39.5
RS6X-22-1BD	1	605.9	2.0	593.5	5.00	0.06	0.0	0.0	46.4
RS6Y-23-1BD	1	403.5	2.0	374.3	5.00	0.06	0.0	0.0	34.2
Zone 8									
RS-07-NE CORRIDOR	1	1043.0	0.0	600.0	0.00	0.00	600.0	0.0	600.0
RS-07-SW CORRIDOR	1	926.0	0.0	400.0	0.00	0.00	400.0	0.0	400.0
RS7A-01-1BD+D	1	637.3	2.0	465.7	5.00	0.06	0.0	0.0	48.2
RS7B-03-2BD	1	1255.4	4.0	1043.3	5.00	0.06	0.0	0.0	95.3
RS7C-05-2B	1	735.2	3.0	520.8	5.00	0.06	0.0	0.0	59.1
RS7D-06-1BD	1	499.5	2.0	375.8	5.00	0.06	0.0	0.0	40.0
RS7E-07-1BD	1	582.0	2.0	393.1	5.00	0.06	0.0	0.0	44.9
RS7F-08-1BD	1	579.4	2.0	361.7	5.00	0.06	0.0	0.0	44.8
RS7G-09-2BD	1	1169.0	4.0	613.9	5.00	0.06	0.0	0.0	90.1
RS7H-10-2BD+D	1	1258.5	4.0	678.2	5.00	0.06	0.0	0.0	95.5
RS7J-11-1BD	1	475.3	2.0	389.3	5.00	0.06	0.0	0.0	38.5
RS7K-12-1BD+D	1	581.7	2.0	451.1	5.00	0.06	0.0	0.0	44.9
RS7L-13-1BD	1	482.0	2.0	431.1	5.00	0.06	0.0	0.0	38.9
RS7N-16-2BD+D	1	2201.5	4.0	1851.8	5.00	0.06	0.0	0.0	152.1
RS7P-18-2BD	1	697.4	4.0	597.2	5.00	0.06	0.0	0.0	61.8
RS7U-19-1BD+D	1	677.5	2.0	412.9	5.00	0.06	0.0	0.0	50.7
RS7V-20-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS7W-21-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS7X-22-1BD	1	605.9	2.0	529.4	5.00	0.06	0.0	0.0	46.4
RS7Y-23-1BD	1	403.5	2.0	344.1	5.00	0.06	0.0	0.0	34.2
Zone 9									
RS-08-NE CORRIDOR	1	1043.0	0.0	600.0	0.00	0.00	600.0	0.0	600.0
RS-08-SW CORRIDOR	1	926.0	0.0	400.0	0.00	0.00	400.0	0.0	400.0
RS8A-01-1BD+D	1	637.3	2.0	465.7	5.00	0.06	0.0	0.0	48.2
RS8B-03-2BD	1	1255.4	4.0	1043.3	5.00	0.06	0.0	0.0	95.3
RS8C-05-2B	1	735.2	3.0	520.8	5.00	0.06	0.0	0.0	59.1
RS8D-06-1BD	1	499.5	2.0	375.8	5.00	0.06	0.0	0.0	40.0
RS8E-07-1BD	1	582.0	2.0	393.1	5.00	0.06	0.0	0.0	44.9
RS8F-08-1BD	1	579.4	2.0	361.7	5.00	0.06	0.0	0.0	44.8
RS8G-09-2BD	1	1169.0	4.0	613.9	5.00	0.06	0.0	0.0	90.1
RS8H-10-2BD+D	1	1258.5	4.0	678.2	5.00	0.06	0.0	0.0	95.5
RS8J-11-1BD	1	475.3	2.0	389.3	5.00	0.06	0.0	0.0	38.5
RS8K-12-1BD+D	1	581.7	2.0	451.1	5.00	0.06	0.0	0.0	44.9
RS8L-13-1BD	1	482.0	2.0	431.1	5.00	0.06	0.0	0.0	38.9
RS8M-15-2BD	1	910.0	4.0	824.8	5.00	0.06	0.0	0.0	74.6
RS8N-16-2BD+D	1	1297.5	4.0	1097.1	5.00	0.06	0.0	0.0	97.9
RS8P-18-2BD	1	697.4	4.0	597.2	5.00	0.06	0.0	0.0	61.8
RS8U-19-1BD+D	1	677.5	2.0	412.9	5.00	0.06	0.0	0.0	50.7
RS8V-20-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5

RS8W-21-1BD	1	491.3	2.0	267.0	5.00	0.06	0.0	0.0	39.5
RS8X-22-1BD	1	605.9	2.0	529.4	5.00	0.06	0.0	0.0	46.4
RS8Y-23-1BD	1	403.5	2.0	344.1	5.00	0.06	0.0	0.0	34.2
Zone 10									
RS-09-NE CORRIDOR	1	1043.0	2.0	600.0	0.00	0.00	600.0	0.0	600.0
RS-09-SW CORRIDOR	1	926.0	0.0	400.0	0.00	0.00	400.0	0.0	400.0
RS9A-01-1BD+D	1	637.3	2.0	505.7	5.00	0.06	0.0	0.0	48.2
RS9B-03-2BD	1	1255.4	4.0	1137.4	5.00	0.06	0.0	0.0	95.3
RS9C-05-2B	1	735.2	3.0	564.2	5.00	0.06	0.0	0.0	59.1
RS9D-06-1BD	1	499.5	2.0	408.1	5.00	0.06	0.0	0.0	40.0
RS9E-07-1BD	1	582.0	2.0	425.4	5.00	0.06	0.0	0.0	44.9
RS9F-08-1BD	1	579.4	2.0	362.6	5.00	0.06	0.0	0.0	44.8
RS9G-09-2BD	1	1169.0	4.0	655.9	5.00	0.06	0.0	0.0	90.1
RS9H-10-2BD+D	1	1258.5	4.0	725.9	5.00	0.06	0.0	0.0	95.5
RS9J-11-1BD	1	475.3	2.0	425.4	5.00	0.06	0.0	0.0	38.5
RS9K-12-1BD+D	1	581.7	2.0	490.9	5.00	0.06	0.0	0.0	44.9
RS9L-13-1BD	1	482.0	2.0	470.8	5.00	0.06	0.0	0.0	38.9
RS9M-15-2BD	1	910.0	4.0	901.1	5.00	0.06	0.0	0.0	74.6
RS9N-16-2BD+D	1	1297.5	4.0	1197.6	5.00	0.06	0.0	0.0	97.9
RS9P-18-2BD	1	697.4	4.0	649.5	5.00	0.06	0.0	0.0	61.8
RS9U-19-1BD+D	1	677.5	2.0	444.8	5.00	0.06	0.0	0.0	50.7
RS9V-20-1BD	1	491.3	2.0	285.4	5.00	0.06	0.0	0.0	39.5
RS9W-21-1BD	1	491.3	2.0	285.4	5.00	0.06	0.0	0.0	39.5
RS9X-22-1BD	1	605.9	2.0	593.5	5.00	0.06	0.0	0.0	46.4
RS9Y-23-1BD	1	403.5	2.0	374.3	5.00	0.06	0.0	0.0	34.2
Zone 11									
RS-10-NE CORRIDOR	1	1215.0	0.0	640.0	0.00	0.00	640.0	0.0	640.0
RS-10-SW CORRIDOR	1	1215.0	0.0	800.0	0.00	0.00	800.0	0.0	800.0
RS10A-01-1BD+D	1	637.3	2.0	505.7	5.00	0.06	0.0	0.0	48.2
RS10AA-24-1BD	1	521.0	2.0	329.2	5.00	0.06	0.0	0.0	41.3
RS10B-03-2BD	1	1255.4	4.0	1309.0	5.00	0.06	0.0	0.0	95.3
RS10BB-25-1BD	1	523.0	2.0	316.5	5.00	0.06	0.0	0.0	41.4
RS10C-05-2B	1	735.2	3.0	601.5	5.00	0.06	0.0	0.0	59.1
RS10CC-26-1BD	1	477.0	2.0	284.4	5.00	0.06	0.0	0.0	38.6
RS10D-06-1BD	1	499.5	2.0	421.1	5.00	0.06	0.0	0.0	40.0
RS10DD-27-1BD	1	466.0	2.0	293.8	5.00	0.06	0.0	0.0	38.0
RS10E-07-1BD	1	582.0	2.0	433.9	5.00	0.06	0.0	0.0	44.9
RS10EE-28-1BD	1	466.0	2.0	282.1	5.00	0.06	0.0	0.0	38.0
RS10F-08-1BD	1	579.4	2.0	367.0	5.00	0.06	0.0	0.0	44.8
RS10FF-29-1BD	1	472.0	2.0	294.8	5.00	0.06	0.0	0.0	38.3
RS10G-09-2BD	1	1169.0	4.0	660.2	5.00	0.06	0.0	0.0	90.1
RS10GG-30-1BD+D	1	586.0	2.0	358.2	5.00	0.06	0.0	0.0	45.2
RS10H-10-2BD+D	1	1258.5	4.0	731.8	5.00	0.06	0.0	0.0	95.5
RS10HH-31-1BD	1	531.0	2.0	335.5	5.00	0.06	0.0	0.0	41.9

RS10J-11-1BD	1	475.3	2.0	429.4	5.00	0.06	0.0	0.0	38.5
RS10JJ-32-1BD	1	554.0	2.0	380.1	5.00	0.06	0.0	0.0	43.2
RS10K-12-1BD+D	1	581.7	2.0	500.4	5.00	0.06	0.0	0.0	44.9
RS10KK-33-1BD	1	643.0	2.0	660.1	5.00	0.06	0.0	0.0	48.6
RS10L-13-2BD	1	852.0	3.0	705.3	5.00	0.06	0.0	0.0	66.1
RS10LL-34-1BD+D	1	633.0	2.0	504.8	5.00	0.06	0.0	0.0	48.0
RS10MM-35-1BD+D	1	789.0	2.0	627.3	5.00	0.06	0.0	0.0	57.3
RS10N-15-2BD+D	1	2763.0	3.0	2212.1	5.00	0.06	0.0	0.0	180.8
RS10NN-36-1BD	1	633.0	2.0	504.8	5.00	0.06	0.0	0.0	48.0
RS10U-19-2BD+D	1	1356.0	5.0	898.4	5.00	0.06	0.0	0.0	106.4
RS10V-20-1BD	1	491.3	2.0	285.4	5.00	0.06	0.0	0.0	39.5
RS10W-21-1BD	1	491.3	2.0	285.4	5.00	0.06	0.0	0.0	39.5
RS10X-22-1BD	1	605.9	2.0	593.5	5.00	0.06	0.0	0.0	46.4
RS10Y-23-1BD	1	403.5	2.0	374.3	5.00	0.06	0.0	0.0	34.2
Zone 12									
RS-11-NE CORRIDOR	1	470.0	0.0	400.0	0.00	0.00	400.0	0.0	400.0
RS-11-SW CORRIDOR	1	470.0	0.0	480.0	0.00	0.00	480.0	0.0	480.0
RS11A-03-2BD+D	1	2378.0	4.0	1642.8	5.00	0.06	0.0	0.0	162.7
RS11AA-24-1BD	1	521.0	2.0	329.2	5.00	0.06	0.0	0.0	41.3
RS11B-07-2BD	1	1524.0	4.0	1134.3	5.00	0.06	0.0	0.0	111.4
RS11BB-25-1BD	1	523.0	2.0	316.5	5.00	0.06	0.0	0.0	41.4
RS11C-09-2BD	1	1165.0	3.0	661.9	5.00	0.06	0.0	0.0	84.9
RS11CC-26-1BD	1	477.0	2.0	284.4	5.00	0.06	0.0	0.0	38.6
RS11D-10-2BD	1	1165.0	3.0	661.6	5.00	0.06	0.0	0.0	84.9
RS11DD-27-1BD	1	466.0	2.0	293.8	5.00	0.06	0.0	0.0	38.0
RS11E-12-2BD+D	1	1499.0	4.0	1297.1	5.00	0.06	0.0	0.0	109.9
RS11EE-28-1BD	1	466.0	2.0	282.1	5.00	0.06	0.0	0.0	38.0
RS11F-16-3BD	1	2457.0	5.0	1894.9	5.00	0.06	0.0	0.0	172.4
RS11FF-29-1BD	1	472.0	2.0	294.8	5.00	0.06	0.0	0.0	38.3
RS11GG-30-1BD+D	1	586.0	2.0	358.2	5.00	0.06	0.0	0.0	45.2
RS11H-18-2BD+D	1	1923.0	5.0	1003.5	5.00	0.06	0.0	0.0	140.4
RS11HH-31-1BD	1	531.0	2.0	335.5	5.00	0.06	0.0	0.0	41.9
RS11JJ-32-1BD	1	554.0	2.0	380.1	5.00	0.06	0.0	0.0	43.2
RS11V-33-1BD	1	643.0	2.0	660.1	5.00	0.06	0.0	0.0	48.6
RS11W-35-2BD	1	1420.0	2.0	1108.6	5.00	0.06	0.0	0.0	95.2
RS11X-22-1BD	1	605.9	2.0	593.5	5.00	0.06	0.0	0.0	46.4
RS11Y-23-1BD	1	403.5	2.0	374.3	5.00	0.06	0.0	0.0	34.2
Zone 13									
RS-12-NE CORRIDOR	1	646.1	0.0	400.0	0.00	0.00	400.0	0.0	400.0
RS-12-SW CORRIDOR	1	646.1	0.0	400.0	0.00	0.00	400.0	0.0	400.0
RSPH1A-03-3BD+D	1	2804.0	5.0	2459.0	5.00	0.06	0.0	0.0	193.2
RSPH1AA-24-1BD	1	521.0	2.0	389.5	5.00	0.06	0.0	0.0	41.3
RSPH1B-07-2BD	1	1298.0	3.0	1220.1	5.00	0.06	0.0	0.0	92.9
RSPH1BB-12-2BD+D DUPLEX	1	1507.0	2.0	1606.1	5.00	0.06	0.0	0.0	100.4

RSPH1C-09-3BD+D DUPLEX	1	2912.0	4.0	1946.4	5.00	0.06	0.0	0.0	194.7
RSPH1CC-10-2BD+D DUPLEX	1	2893.0	4.0	1949.9	5.00	0.06	0.0	0.0	193.6
RSPH1D-31-1BD	1	653.0	2.0	724.5	5.00	0.06	0.0	0.0	49.2
RSPH1DD-16-2BD DUPLEX	1	2467.0	4.0	2555.9	5.00	0.06	0.0	0.0	168.0
RSPH1GG-18-2BD+D DUPLEX	1	1920.0	4.0	1158.3	5.00	0.06	0.0	0.0	135.2
RSPH1JJ-32-1BD	1	554.0	2.0	454.0	5.00	0.06	0.0	0.0	43.2
RSPH1V-33-1BD	1	693.0	2.0	824.5	5.00	0.06	0.0	0.0	51.6
RSPH1X-22-1BD	1	696.0	2.0	768.3	5.00	0.06	0.0	0.0	51.8
RSPH1Y-23-1BD	1	462.0	2.0	468.2	5.00	0.06	0.0	0.0	37.7
RSPH2BB-12-2BD+D DUPLEX	1	1017.0	1.0	1213.3	5.00	0.06	0.0	0.0	66.0
RSPH2C-09-3BD+D DUPLEX	1	859.0	1.0	1051.0	5.00	0.06	0.0	0.0	56.5
RSPH2CC-10-3BD+D DUPLEX	1	555.0	1.0	886.8	5.00	0.06	0.0	0.0	38.3
RSPH2DD-16-2BD DUPLEX	1	428.0	0.0	758.1	5.00	0.06	0.0	0.0	25.7
RSPH2GG-18-2BD+D DUPLEX	1	850.0	1.0	708.7	5.00	0.06	0.0	0.0	56.0
Totals (incl. Space Multipliers)				**160418.7**					**31714.2**

Air System Design Load Summary for Condo 4 Pipe

Project Name: 8489d-Aquavista Permit
Prepared by: MCW Consultants Ltd.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1400 COOLING OA DB / WB 86.4 °F / 70.8 °F			HEATING DATA AT DES HTG HEATING OA DB / WB -4.0 °F / -5.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	57068 ft²	1350650	-	57068 ft²	-	-
Wall Transmission	70580 ft²	53131	-	70580 ft²	279779	-
Roof Transmission	19485 ft²	60065	-	19485 ft²	71732	-
Window Transmission	57068 ft²	154356	-	57068 ft²	1478061	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	9299 ft²	63	-	9299 ft²	12399	-
Partitions	2538 ft²	0	-	2538 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	185278 W	632155	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	108419 W	369922	-	0	0	-
People	764	231977	271820	0	0	0
Infiltration	-	88955	108976	-	577732	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	10%	241970	0
>> Total Zone Loads	**-**	**2941274**	**380796**	**-**	**2661673**	**0**
Zone Conditioning	-	2814941	380796	-	2626121	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	31714 CFM	0	-	31714 CFM	0	-
Ventilation Load	31714 CFM	385231	375310	31714 CFM	2466179	0
Ventilation Fan Load	31714 CFM	70531	-	31714 CFM	-70531	-
Space Fan Coil Fans	-	20135	-	-	-15313	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**3290836**	**756106**	**-**	**5006457**	**0**
Cooling Coil	-	620616	0	-	0	0
Heating Coil	-	0	-	-	2412472	-
Terminal Unit Cooling	-	2670220	756514	-	0	0
Terminal Unit Heating	-	0	-	-	2593982	-
>> Total Conditioning	**-**	**3290836**	**756514**	**-**	**5006454**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for Affordable 2 Pipe

Project Name: 8489d-Aquavista Permit — 04/17/2015
Prepared by: MCW Consultants Ltd. — 01:38PM

Air System Information

Air System Name	**Affordable 2 Pipe**		Number of zones	**10**	
Equipment Class	**TERM**		Floor Area	**67250.2**	ft²
Air System Type	**2P-FC**		Location	**Toronto, Ontario**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Sum of space airflow rates**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Cooling Coil Sizing Data

Total coil load	**18.6**	Tons	Load occurs at	**Jul 1500**	
Total coil load	**223.1**	MBH	OA DB / WB	**87.0 / 71.0**	°F
Sensible coil load	**223.1**	MBH	Entering DB / WB	**87.0 / 71.0**	°F
Coil CFM at Jul 1500	**11037**	CFM	Leaving DB / WB	**67.9 / 65.2**	°F
Max coil CFM	**11037**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**1.000**				
Water flow @ 10.0 °F rise	**44.63**	gpm			

Heating Coil Sizing Data

Max coil load	**839.6**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**11037**	CFM	Ent. DB / Lvg DB	**-4.0 / 67.9**	°F
Max coil CFM	**11037**	CFM			
Water flow @ 20.0 °F drop	**84.00**	gpm			

Ventilation Fan Sizing Data

Actual max CFM	**11037**	CFM	Fan motor BHP	**9.07**	BHP
Standard CFM	**10812**	CFM	Fan motor kW	**7.19**	kW
Actual max CFM/ft²	**0.16**	CFM/ft²	Fan static	**3.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**11037**	CFM	CFM/person	**38.86**	CFM/person
CFM/ft²	**0.16**	CFM/ft²			

Zone Sizing Summary for Affordable 2 Pipe

Project Name: 8489d-Aquavista Permit
Prepared by: MCW Consultants Ltd.

04/17/2015
01:38PM

Air System Information

Air System Name ..... **Affordable 2 Pipe**
Equipment Class ..... **TERM**
Air System Type **2P-FC**

Number of zones **10**
Floor Area ..... **67250.2** ft²
Location ..... **Toronto, Ontario**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM ..... **Sum of space airflow rates**
Space CFM ..... **Individual peak space loads**

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Air Flow (CFM)	Minimum Air Flow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft²)	Zone CFM/ft²
Zone 1	31.7	2000	1500	Sep 1500	20.2	737.0	2.71
Zone 2	96.1	5343	5001	Jul 1700	85.0	8091.9	0.66
Zone 3	96.1	5343	5001	Jul 1700	85.0	8091.9	0.66
Zone 4	96.1	5343	5001	Jul 1700	85.0	8091.9	0.66
Zone 5	96.1	5343	5001	Jul 1700	85.0	8091.9	0.66
Zone 6	102.6	5701	5359	Jul 1700	94.5	8091.9	0.70
Zone 7	96.1	5343	5001	Jul 1700	85.0	8091.9	0.66
Zone 8	96.1	5343	5001	Jul 1700	85.0	8091.9	0.66
Zone 9	102.6	5701	5359	Jul 1700	94.5	8091.9	0.70
Zone 10	70.7	3339	3339	Aug 1400	51.3	1778.0	1.88

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (MBH)	Sens Coil Load (MBH)	Coil Entering DB / WB (°F)	Coil Leaving DB / WB (°F)	Water Flow @ 10.0 °F (gpm)	Time of Peak Load
Zone 1	45.6	22.2	70.2 / 65.9	55.0 / 54.9	9.13	Aug 1600
Zone 2	112.6	86.9	75.1 / 64.0	55.0 / 54.5	22.53	Jul 1700
Zone 3	112.6	86.9	75.1 / 64.0	55.0 / 54.5	22.53	Jul 1700
Zone 4	112.6	86.9	75.1 / 64.0	55.0 / 54.5	22.53	Jul 1700
Zone 5	112.6	86.9	75.1 / 64.0	55.0 / 54.5	22.53	Jul 1700
Zone 6	119.0	93.0	75.2 / 63.9	55.0 / 54.5	23.81	Jul 1700
Zone 7	112.6	86.9	75.1 / 64.0	55.0 / 54.5	22.53	Jul 1700
Zone 8	112.6	86.9	75.1 / 64.0	55.0 / 54.5	22.53	Jul 1700
Zone 9	119.0	93.0	75.2 / 63.9	55.0 / 54.5	23.81	Jul 1700
Zone 10	79.7	65.5	75.2 / 63.5	55.0 / 54.5	15.95	Aug 1400

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (°F)	Htg Coil Water Flow @20.0 °F (gpm)	Fan Design AirFlow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design AirFlow (CFM)
Zone 1	19.3	70.2 / 95.0	1.93	2000	0.118	0.094	2000
Zone 2	82.9	69.4 / 95.0	8.29	5343	0.316	0.251	1041
Zone 3	82.9	69.4 / 95.0	8.29	5343	0.316	0.251	1041
Zone 4	82.9	69.4 / 95.0	8.29	5343	0.316	0.251	1041
Zone 5	82.9	69.4 / 95.0	8.29	5343	0.316	0.251	1041
Zone 6	92.2	69.4 / 95.0	9.22	5701	0.337	0.268	1041
Zone 7	82.9	69.4 / 95.0	8.29	5343	0.316	0.251	1041
Zone 8	82.9	69.4 / 95.0	8.29	5343	0.316	0.251	1041
Zone 9	92.2	69.4 / 95.0	9.22	5701	0.337	0.268	1041
Zone 10	50.2	69.5 / 95.0	5.02	3339	0.198	0.157	707

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
AFF LOBBY/MAIL	1	31.7	Sep 1500	2000	20.2	737.0	2.71
Zone 2							
AFF-02-CORRIDOR	1	2.9	Jan 2300	480	0.0	1070.9	0.45
AFF201	1	9.6	Sep 1400	455	7.9	569.0	0.80
AFF202	1	11.3	Sep 1400	536	9.0	569.0	0.94
AFF203	1	9.9	Sep 1400	469	7.9	633.0	0.74
AFF204	1	14.4	Sep 1500	680	12.5	880.0	0.77
AFF205	1	10.6	Jul 1700	500	9.8	593.0	0.84
AFF206	1	9.4	Jul 1700	442	7.3	681.0	0.65
AFF207	1	9.9	Jun 1700	467	6.4	957.0	0.49
AFF208	1	6.9	Jun 1700	325	7.1	489.0	0.66
AFF209	1	8.4	Jun 1700	395	6.2	656.0	0.60
AFF210	1	12.6	Jun 1700	594	10.8	994.0	0.60
Zone 3							
AFF-03-CORRIDOR	1	2.9	Jan 2300	480	0.0	1070.9	0.45
AFF301	1	9.6	Sep 1400	455	7.9	569.0	0.80
AFF302	1	11.3	Sep 1400	536	9.0	569.0	0.94
AFF303	1	9.9	Sep 1400	469	7.9	633.0	0.74
AFF304	1	14.4	Sep 1500	680	12.5	880.0	0.77
AFF305	1	10.6	Jul 1700	500	9.8	593.0	0.84
AFF306	1	9.4	Jul 1700	442	7.3	681.0	0.65
AFF307	1	9.9	Jun 1700	467	6.4	957.0	0.49
AFF308	1	6.9	Jun 1700	325	7.1	489.0	0.66
AFF309	1	8.4	Jun 1700	395	6.2	656.0	0.60
AFF310	1	12.6	Jun 1700	594	10.8	994.0	0.60
Zone 4							
AFF-04-CORRIDOR	1	2.9	Jan 2300	480	0.0	1070.9	0.45
AFF401	1	9.6	Sep 1400	455	7.9	569.0	0.80
AFF402	1	11.3	Sep 1400	536	9.0	569.0	0.94
AFF403	1	9.9	Sep 1400	469	7.9	633.0	0.74
AFF404	1	14.4	Sep 1500	680	12.5	880.0	0.77
AFF405	1	10.6	Jul 1700	500	9.8	593.0	0.84
AFF406	1	9.4	Jul 1700	442	7.3	681.0	0.65
AFF407	1	9.9	Jun 1700	467	6.4	957.0	0.49
AFF408	1	6.9	Jun 1700	325	7.1	489.0	0.66
AFF409	1	8.4	Jun 1700	395	6.2	656.0	0.60
AFF410	1	12.6	Jun 1700	594	10.8	994.0	0.60
Zone 5							
AFF-05-CORRIDOR	1	2.9	Jan 2300	480	0.0	1070.9	0.45
AFF501	1	9.6	Sep 1400	455	7.9	569.0	0.80
AFF502	1	11.3	Sep 1400	536	9.0	569.0	0.94
AFF503	1	9.9	Sep 1400	469	7.9	633.0	0.74
AFF504	1	14.4	Sep 1500	680	12.5	880.0	0.77
AFF505	1	10.6	Jul 1700	500	9.8	593.0	0.84
AFF506	1	9.4	Jul 1700	442	7.3	681.0	0.65
AFF507	1	9.9	Jun 1700	467	6.4	957.0	0.49
AFF508	1	6.9	Jun 1700	325	7.1	489.0	0.66
AFF509	1	8.4	Jun 1700	395	6.2	656.0	0.60
AFF510	1	12.6	Jun 1700	594	10.8	994.0	0.60
Zone 6							
AFF-06-CORRIDOR	1	2.9	Jan 2300	480	0.0	1070.9	0.45
AFF601	1	10.4	Sep 1400	491	8.8	569.0	0.86
AFF602	1	12.3	Sep 1400	581	10.0	569.0	1.02
AFF603	1	10.7	Sep 1400	505	8.8	633.0	0.80

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft^2)	Space CFM/ft^2
AFF604	1	15.5	Sep 1500	733	13.9	880.0	0.83
AFF605	1	11.4	Jul 1700	540	10.9	593.0	0.91
AFF606	1	10.0	Jul 1700	474	8.2	681.0	0.70
AFF607	1	10.5	Jun 1700	495	7.1	957.0	0.52
AFF608	1	7.3	Jun 1700	346	7.9	489.0	0.71
AFF609	1	8.9	Jun 1700	420	6.9	656.0	0.64
AFF610	1	13.4	Jun 1700	635	12.1	994.0	0.64
Zone 7							
AFF-07-CORRIDOR	1	2.9	Jan 2300	480	0.0	1070.9	0.45
AFF701	1	9.6	Sep 1400	455	7.9	569.0	0.80
AFF702	1	11.3	Sep 1400	536	9.0	569.0	0.94
AFF703	1	9.9	Sep 1400	469	7.9	633.0	0.74
AFF704	1	14.4	Sep 1500	680	12.5	880.0	0.77
AFF705	1	10.6	Jul 1700	500	9.8	593.0	0.84
AFF706	1	9.4	Jul 1700	442	7.3	681.0	0.65
AFF707	1	9.9	Jun 1700	467	6.4	957.0	0.49
AFF708	1	6.9	Jun 1700	325	7.1	489.0	0.66
AFF709	1	8.4	Jun 1700	395	6.2	656.0	0.60
AFF710	1	12.6	Jun 1700	594	10.8	994.0	0.60
Zone 8							
AFF-08-CORRIDOR	1	2.9	Jan 2300	480	0.0	1070.9	0.45
AFF801	1	9.6	Sep 1400	455	7.9	569.0	0.80
AFF802	1	11.3	Sep 1400	536	9.0	569.0	0.94
AFF803	1	9.9	Sep 1400	469	7.9	633.0	0.74
AFF804	1	14.4	Sep 1500	680	12.5	880.0	0.77
AFF805	1	10.6	Jul 1700	500	9.8	593.0	0.84
AFF806	1	9.4	Jul 1700	442	7.3	681.0	0.65
AFF807	1	9.9	Jun 1700	467	6.4	957.0	0.49
AFF808	1	6.9	Jun 1700	325	7.1	489.0	0.66
AFF809	1	8.4	Jun 1700	395	6.2	656.0	0.60
AFF810	1	12.6	Jun 1700	594	10.8	994.0	0.60
Zone 9							
AFF-09-CORRIDOR	1	2.9	Jan 2300	480	0.0	1070.9	0.45
AFF901	1	10.4	Sep 1400	491	8.8	569.0	0.86
AFF902	1	12.3	Sep 1400	581	10.0	569.0	1.02
AFF903	1	10.7	Sep 1400	505	8.8	633.0	0.80
AFF904	1	15.5	Sep 1500	733	13.9	880.0	0.83
AFF905	1	11.4	Jul 1700	540	10.9	593.0	0.91
AFF906	1	10.0	Jul 1700	474	8.2	681.0	0.70
AFF907	1	10.5	Jun 1700	495	7.1	957.0	0.52
AFF908	1	7.3	Jun 1700	346	7.9	489.0	0.71
AFF909	1	8.9	Jun 1700	420	6.9	656.0	0.64
AFF910	1	13.4	Jun 1700	635	12.1	994.0	0.64
Zone 10							
AFF AMENITY 13	1	70.7	Aug 1400	3339	51.3	1778.0	1.88

Ventilation Sizing Summary for Affordable 2 Pipe

1. Summary

Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate ..... **11037** CFM

2. Space Ventilation Analysis Table

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
AFF LOBBY/MAIL	1	737.0	30.0	2000.0	0.00	0.00	2000.0	0.0	2000.0
Zone 2									
AFF-02-CORRIDOR	1	1070.9	0.0	480.0	0.00	0.00	480.0	0.0	480.0
AFF201	1	569.0	2.0	455.2	5.00	0.06	0.0	0.0	44.1
AFF202	1	569.0	2.0	536.1	5.00	0.06	0.0	0.0	44.1
AFF203	1	633.0	2.0	468.7	5.00	0.06	0.0	0.0	48.0
AFF204	1	880.0	4.0	680.0	5.00	0.06	0.0	0.0	72.8
AFF205	1	593.0	3.0	499.6	5.00	0.06	0.0	0.0	50.6
AFF206	1	681.0	3.0	442.4	5.00	0.06	0.0	0.0	55.9
AFF207	1	957.0	3.0	467.4	5.00	0.06	0.0	0.0	72.4
AFF208	1	489.0	2.0	325.0	5.00	0.06	0.0	0.0	39.3
AFF209	1	656.0	3.0	394.7	5.00	0.06	0.0	0.0	54.4
AFF210	1	994.0	4.0	594.0	5.00	0.06	0.0	0.0	79.6
Zone 3									
AFF-03-CORRIDOR	1	1070.9	0.0	480.0	0.00	0.00	480.0	0.0	480.0
AFF301	1	569.0	2.0	455.2	5.00	0.06	0.0	0.0	44.1
AFF302	1	569.0	2.0	536.1	5.00	0.06	0.0	0.0	44.1
AFF303	1	633.0	2.0	468.7	5.00	0.06	0.0	0.0	48.0
AFF304	1	880.0	4.0	680.0	5.00	0.06	0.0	0.0	72.8
AFF305	1	593.0	3.0	499.6	5.00	0.06	0.0	0.0	50.6
AFF306	1	681.0	3.0	442.4	5.00	0.06	0.0	0.0	55.9
AFF307	1	957.0	3.0	467.4	5.00	0.06	0.0	0.0	72.4
AFF308	1	489.0	2.0	325.0	5.00	0.06	0.0	0.0	39.3
AFF309	1	656.0	3.0	394.7	5.00	0.06	0.0	0.0	54.4
AFF310	1	994.0	4.0	594.0	5.00	0.06	0.0	0.0	79.6
Zone 4									
AFF-04-CORRIDOR	1	1070.9	0.0	480.0	0.00	0.00	480.0	0.0	480.0
AFF401	1	569.0	2.0	455.2	5.00	0.06	0.0	0.0	44.1
AFF402	1	569.0	2.0	536.1	5.00	0.06	0.0	0.0	44.1
AFF403	1	633.0	2.0	468.7	5.00	0.06	0.0	0.0	48.0
AFF404	1	880.0	4.0	680.0	5.00	0.06	0.0	0.0	72.8
AFF405	1	593.0	3.0	499.6	5.00	0.06	0.0	0.0	50.6
AFF406	1	681.0	3.0	442.4	5.00	0.06	0.0	0.0	55.9
AFF407	1	957.0	3.0	467.4	5.00	0.06	0.0	0.0	72.4
AFF408	1	489.0	2.0	325.0	5.00	0.06	0.0	0.0	39.3
AFF409	1	656.0	3.0	394.7	5.00	0.06	0.0	0.0	54.4

AFF410	1	994.0	4.0	594.0	5.00	0.06	0.0	0.0	79.6
Zone 5									
AFF-05-CORRIDOR	1	1070.9	0.0	480.0	0.00	0.00	480.0	0.0	480.0
AFF501	1	569.0	2.0	455.2	5.00	0.06	0.0	0.0	44.1
AFF502	1	569.0	2.0	536.1	5.00	0.06	0.0	0.0	44.1
AFF503	1	633.0	2.0	468.7	5.00	0.06	0.0	0.0	48.0
AFF504	1	880.0	4.0	680.0	5.00	0.06	0.0	0.0	72.8
AFF505	1	593.0	3.0	499.6	5.00	0.06	0.0	0.0	50.6
AFF506	1	681.0	3.0	442.4	5.00	0.06	0.0	0.0	55.9
AFF507	1	957.0	3.0	467.4	5.00	0.06	0.0	0.0	72.4
AFF508	1	489.0	2.0	325.0	5.00	0.06	0.0	0.0	39.3
AFF509	1	656.0	3.0	394.7	5.00	0.06	0.0	0.0	54.4
AFF510	1	994.0	4.0	594.0	5.00	0.06	0.0	0.0	79.6
Zone 6									
AFF-06-CORRIDOR	1	1070.9	0.0	480.0	0.00	0.00	480.0	0.0	480.0
AFF601	1	569.0	2.0	491.4	5.00	0.06	0.0	0.0	44.1
AFF602	1	569.0	2.0	581.2	5.00	0.06	0.0	0.0	44.1
AFF603	1	633.0	2.0	504.8	5.00	0.06	0.0	0.0	48.0
AFF604	1	880.0	4.0	732.9	5.00	0.06	0.0	0.0	72.8
AFF605	1	593.0	3.0	540.1	5.00	0.06	0.0	0.0	50.6
AFF606	1	681.0	3.0	474.4	5.00	0.06	0.0	0.0	55.9
AFF607	1	957.0	3.0	494.8	5.00	0.06	0.0	0.0	72.4
AFF608	1	489.0	2.0	345.8	5.00	0.06	0.0	0.0	39.3
AFF609	1	656.0	3.0	420.2	5.00	0.06	0.0	0.0	54.4
AFF610	1	994.0	4.0	635.3	5.00	0.06	0.0	0.0	79.6
Zone 7									
AFF-07-CORRIDOR	1	1070.9	0.0	480.0	0.00	0.00	480.0	0.0	480.0
AFF701	1	569.0	2.0	455.2	5.00	0.06	0.0	0.0	44.1
AFF702	1	569.0	2.0	536.1	5.00	0.06	0.0	0.0	44.1
AFF703	1	633.0	2.0	468.7	5.00	0.06	0.0	0.0	48.0
AFF704	1	880.0	4.0	680.0	5.00	0.06	0.0	0.0	72.8
AFF705	1	593.0	3.0	499.6	5.00	0.06	0.0	0.0	50.6
AFF706	1	681.0	3.0	442.4	5.00	0.06	0.0	0.0	55.9
AFF707	1	957.0	3.0	467.4	5.00	0.06	0.0	0.0	72.4
AFF708	1	489.0	2.0	325.0	5.00	0.06	0.0	0.0	39.3
AFF709	1	656.0	3.0	394.7	5.00	0.06	0.0	0.0	54.4
AFF710	1	994.0	4.0	594.0	5.00	0.06	0.0	0.0	79.6
Zone 8									
AFF-08-CORRIDOR	1	1070.9	0.0	480.0	0.00	0.00	480.0	0.0	480.0
AFF801	1	569.0	2.0	455.2	5.00	0.06	0.0	0.0	44.1
AFF802	1	569.0	2.0	536.1	5.00	0.06	0.0	0.0	44.1
AFF803	1	633.0	2.0	468.7	5.00	0.06	0.0	0.0	48.0
AFF804	1	880.0	4.0	680.0	5.00	0.06	0.0	0.0	72.8
AFF805	1	593.0	3.0	499.6	5.00	0.06	0.0	0.0	50.6

AFF806	1	681.0	3.0	442.4	5.00	0.06	0.0	0.0	55.9
AFF807	1	957.0	3.0	467.4	5.00	0.06	0.0	0.0	72.4
AFF808	1	489.0	2.0	325.0	5.00	0.06	0.0	0.0	39.3
AFF809	1	656.0	3.0	394.7	5.00	0.06	0.0	0.0	54.4
AFF810	1	994.0	4.0	594.0	5.00	0.06	0.0	0.0	79.6
Zone 9									
AFF-09-CORRIDOR	1	1070.9	0.0	480.0	0.00	0.00	480.0	0.0	480.0
AFF901	1	569.0	2.0	491.4	5.00	0.06	0.0	0.0	44.1
AFF902	1	569.0	2.0	581.2	5.00	0.06	0.0	0.0	44.1
AFF903	1	633.0	2.0	504.8	5.00	0.06	0.0	0.0	48.0
AFF904	1	880.0	4.0	732.9	5.00	0.06	0.0	0.0	72.8
AFF905	1	593.0	3.0	540.1	5.00	0.06	0.0	0.0	50.6
AFF906	1	681.0	3.0	474.4	5.00	0.06	0.0	0.0	55.9
AFF907	1	957.0	3.0	494.8	5.00	0.06	0.0	0.0	72.4
AFF908	1	489.0	2.0	345.8	5.00	0.06	0.0	0.0	39.3
AFF909	1	656.0	3.0	420.2	5.00	0.06	0.0	0.0	54.4
AFF910	1	994.0	4.0	635.3	5.00	0.06	0.0	0.0	79.6
Zone 10									
AFF AMENITY 13	1	1778.0	30.0	3339.5	20.00	0.06	0.0	0.0	706.7
Totals (incl. Space Multipliers)				**48800.7**					**11036.8**

Air System Design Load Summary for Affordable 2 Pipe

Project Name: 8489d-Aquavista Permit 04/17/2015
Prepared by: MCW Consultants Ltd. 01:38PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700 COOLING OA DB / WB 85.0 °F / 70.4 °F			HEATING DATA AT DES HTG HEATING OA DB / WB -4.0 °F / -5.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	16615 ft²	399024	-	16615 ft²	-	-
Wall Transmission	21323 ft²	26012	-	21323 ft²	84994	-
Roof Transmission	1840 ft²	4338	-	1840 ft²	6774	-
Window Transmission	16615 ft²	43342	-	16615 ft²	430329	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	737 ft²	0	-	737 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	56818 W	193860	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	31640 W	107955	-	0	0	-
People	284	79479	87320	0	0	0
Infiltration	-	22922	31515	-	178218	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	10%	70031	0
>> Total Zone Loads	**-**	**876932**	**118835**	**-**	**770346**	**0**
Zone Conditioning	-	837044	118835	-	760886	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	11037 CFM	0	-	11037 CFM	0	-
Ventilation Load	11037 CFM	121193	123073	11037 CFM	858585	0
Ventilation Fan Load	11037 CFM	24545	-	11037 CFM	-24545	-
Space Fan Coil Fans	-	5994	-	-	-4447	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**988776**	**241908**	**-**	**1590479**	**0**
Cooling Coil	-	199468	0	-	0	0
Heating Coil	-	0	-	-	839557	-
Terminal Unit Cooling	-	789308	241984	-	0	0
Terminal Unit Heating	-	0	-	-	750921	-
>> Total Conditioning	**-**	**988776**	**241984**	**-**	**1590478**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for Retail 4 Pipe

Project Name: 8489d-Aquavista Permit
Prepared by: MCW Consultants Ltd.

04/17/2015
01:38PM

Air System Information

Air System Name	**Retail 4 Pipe**	Number of zones	**1**	
Equipment Class	**TERM**	Floor Area	**29145.0**	ft²
Air System Type	**4P-FC**	Location	**Toronto, Ontario**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Sum of space airflow rates**	Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**	Sizing Data	**Calculated**

Cooling Coil Sizing Data

Total coil load	**14.5**	Tons	Load occurs at	**Jul 1500**	
Total coil load	**173.6**	MBH	OA DB / WB	**87.0 / 71.0**	°F
Sensible coil load	**173.6**	MBH	Entering DB / WB	**87.0 / 71.0**	°F
Coil CFM at Jul 1500	**8591**	CFM	Leaving DB / WB	**67.9 / 65.2**	°F
Max coil CFM	**8591**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**1.000**				
Water flow @ 10.0 °F rise	**34.74**	gpm			

Heating Coil Sizing Data

Max coil load	**653.5**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**8591**	CFM	Ent. DB / Lvg DB	**-4.0 / 67.9**	°F
Max coil CFM	**8591**	CFM			
Water flow @ 20.0 °F drop	**65.38**	gpm			

Ventilation Fan Sizing Data

Actual max CFM	**8591**	CFM	Fan motor BHP	**7.06**	BHP
Standard CFM	**8416**	CFM	Fan motor kW	**5.60**	kW
Actual max CFM/ft²	**0.29**	CFM/ft²	Fan static	**3.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**8591**	CFM	CFM/person	**19.09**	CFM/person
CFM/ft²	**0.29**	CFM/ft²			

Zone Sizing Summary for Retail 4 Pipe

Project Name: 8489d-Aquavista Permit — 04/17/2015
Prepared by: MCW Consultants Ltd. — 01:38PM

Air System Information

Air System Name ..... **Retail 4 Pipe**
Equipment Class ..... **TERM**
Air System Type **4P-FC**

Number of zones **1**
Floor Area ..... **29145.0** ft²
Location ..... **Toronto, Ontario**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM ..... **Sum of space airflow rates**
Space CFM ..... **Individual peak space loads**

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Air Flow (CFM)	Minimum Air Flow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft²)	Zone CFM/ft²
Zone 1	928.3	43869	43869	Jul 1500	446.4	29145.0	1.51

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (MBH)	Sens Coil Load (MBH)	Coil Entering DB / WB (°F)	Coil Leaving DB / WB (°F)	Water Flow @ 10.0 °F (gpm)	Time of Peak Load
Zone 1	1192.3	864.4	75.3 / 64.7	55.0 / 54.5	238.58	Jul 1500

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (°F)	Htg Coil Water Flow @20.0 °F (gpm)	Fan Design AirFlow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design AirFlow (CFM)
Zone 1	437.7	69.7 / 95.0	43.80	43869	2.595	2.059	8591

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
RETAIL-01	1	928.3	Jul 1500	43869	446.4	29145.0	1.51

Ventilation Sizing Summary for Retail 4 Pipe

Project Name: 8489d-Aquavista Permit
Prepared by: MCW Consultants Ltd.

04/17/2015
01:38PM

1. Summary

Ventilation Sizing Method ..... **ASHRAE Std 62.1-2007**
Design Condition ..... **Heating operation**
Occupant Diversity **1.000**
Uncorrected Ventilation Airflow Rate ..... **6872** CFM
System Ventilation Efficiency **1.000**
Design Ventilation Airflow Rate ..... **8591** CFM

2. Space Ventilation Analysis Table

Zone Name / Space Name	Mult.	Supply Air (CFM)	Floor Area (ft^2)	Required Outdoor Air (CFM/ft^2)	Time Averaged Occupancy	Required Outdoor Air (CFM/person)	Air Distribution Effectiveness	Required Outdoor Air (CFM)	Uncorrected Outdoor Air (CFM)	Space Ventilation Efficiency
Zone 1										
RETAIL-01	1	43869	29145.0	0.12	450.0	7.50	0.80	**8591**	*6872*	1.000
Totals (incl. Space Multipliers)		**43869**							**6872**	**1.000**

Air System Design Load Summary for Retail 4 Pipe

Project Name: 8489d-Aquavista Permit
Prepared by: MCW Consultants Ltd.

04/17/2015
01:38PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 87.0 °F / 71.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB -4.0 °F / -5.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	6453 ft²	134908	-	6453 ft²	-	-
Wall Transmission	7009 ft²	9550	-	7009 ft²	32767	-
Roof Transmission	15001 ft²	48072	-	15001 ft²	55224	-
Window Transmission	6453 ft²	18930	-	6453 ft²	167133	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	29145 ft²	1713	-	29145 ft²	87435	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	94430 W	322188	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	58290 W	198885	-	0	0	-
People	450	132748	204750	0	0	0
Infiltration	-	17092	16154	-	63239	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	44204	11045	10%	40580	0
>> Total Zone Loads	**-**	**928289**	**231949**	**-**	**446377**	**0**
Zone Conditioning	-	911129	231949	-	442176	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	8591 CFM	0	-	8591 CFM	0	-
Ventilation Load	8591 CFM	101470	94393	8591 CFM	670749	0
Ventilation Fan Load	8591 CFM	19105	-	8591 CFM	-19105	-
Space Fan Coil Fans	-	6453	-	-	-2620	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**1038157**	**326342**	**-**	**1091200**	**0**
Cooling Coil	-	173616	0	-	0	0
Heating Coil	-	0	-	-	653472	-
Terminal Unit Cooling	-	864402	327870	-	0	0
Terminal Unit Heating	-	0	-	-	437727	-
>> Total Conditioning	**-**	**1038018**	**327870**	**-**	**1091200**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		