



WILLETT HOFMANN  
& ASSOCIATES INC  
ENGINEERING ARCHITECTURE LAND SURVEYING

To: David Plyman, City Manager, Mayor Olson and City Council

From: Matt Hansen

Date: September 11, 2014

Re: Blower Replacement Project

At the City Council Meeting on September 8<sup>th</sup>, the Council wanted to know why the bids for the blower replacement project were significantly more than the amount budgeted in the Capital Outlay budget for the Water Reclamation Division. Also, the Council requested additional technical information on the new turbo blower and why there was such a significant difference between the Base Bid manufacturer and the Alternate Bid manufacturer.

We contacted Trotter & Associates and their engineer's estimate for the construction was \$245,480, as detailed on the attached estimate. This estimate was prepared prior to bidding based on the final plans and specifications. Trotter & Associates was not aware there was a preliminary project cost estimate which is the project cost listed in the Capital Outlay budget. We discussed the project cost with the Water Reclamation Staff and they do not know how the budget was established. Lastly, we reviewed the RMU project file and we did not find any detailed cost estimate for the project budget, however, the grant application that was submitted to Illinois Clean Energy Community Foundation indicated a project budget of \$200,000. Based on our review, we assume RMU developed the project budget since Trotter & Associates indicated they were not aware there was a preliminary project budget. Also, based on the information in the grant application it appears the project budget is \$200,000 and not the \$125,000 indicated in the Capital Outlay Budget. We are not certain, but perhaps this project was planned to be budgeted across two (2) fiscal years and only \$125,000 was budgeted for this year. The grant application project budget is relatively close to the Dahme Mechanical Industries Alternate Bid of \$211,888 for the Aerzen turbo blower.

The existing blowers are 250 Hp Spencer centrifugal blowers. The new blower is a 100 Hp high speed turbo blower and the technical information on the Aerzen blower is attached. We contacted Trotter & Associates to get their opinion as to why there was a significant cost between the two blower manufacturers and they offered the following reasons for the cost difference:

1. APG Neuros is the top rated high speed turbo blower at this time and perhaps they feel secure in their position in the marketplace and were unwilling to reduce their cost even though an alternate bid using another manufacturer was being requested.
2. APG Neuros and Aerzen are represented in this territory by the same company, Drydon Equipment. Aerzen elected to provide pricing directly to the contractors bidding and not through Drydon Equipment. By doing so, there was no cost markup by Drydon Equipment on the Aerzen Blower but there was a markup on the APG Neuros blower.

**Rochelle Municipal Utilities  
2014 Blower Replacement**

Description	Quantity	Unit	Unit Price	Total
<b>GENERAL CONDITIONS</b>				\$ 27,480
<b>Blower Repalcement</b>				\$ 218,000
<b>SUBTOTAL CONSTRUCTION</b>				\$ 245,480
<b>CONTINGENCY (10%)</b>				\$ 24,548
<b>CONSTRUCTION TOTAL</b>				\$ 270,028
<b>DESIGN ENGINEERING 7%</b>				\$ 18,902
<b>CONSTRUCTION ENGINEERING 7%</b>				\$ 18,902
<b>PROJECT TOTAL</b>				\$ 307,832
<b>GENERAL CONDITIONS</b>				
Dumpsters	1	Each	\$ 500	\$ 500
Supervision & Surveying	0	Mo.	\$ 6,000	\$ -
Phone	0	Mo.	\$ 100	\$ -
Record Drawing	1	Each	\$ 3,000	\$ 3,000
Bonds & Insurance	1	Each	\$ 2,180	\$ 2,180
Overhead & Profit	1	Each	\$ 21,800	\$ 21,800
<b>TOTAL GENERAL CONDITIONS</b>				\$ 27,480
<b>Blower Repalcement</b>				
Demolition - remove ex blower	1	L.S.	\$ 8,000	\$ 8,000
Set and pipe new blower	1	L.S.	\$ 15,000	\$ 15,000
Electrical, breaker, conductors, conduit	1	L.S.	\$ 15,000	\$ 15,000
Paint	1.00	L.S.	\$ 2,000	\$ 2,000
Pipe Paint	1.00	L.S.	\$ 10,000	\$ 10,000
Blower Equipment (Neuros)	1.00	L.S.	\$ 168,000	\$ 168,000
<b>TOTAL SHB</b>				\$ 218,000

**AERZEN USA**

Corporation

108 Independence Way  
Coatesville, PA 19320

www.aerzenusa.com

**AERZEN**

Ph: (610) 656-1683

email: tmccurdy@aerzenusa.com

22-May-14

To: Jillian Goodlove, E.I.

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From: Tom McCurdy

Trotter and Associates, Inc.

Aerzen Ref: E23-23268

c/o: Woody G. Wolff fo Drydon Equipment, Inc. (224) 629-4060

Re: City of Rochelle Turbo Blowers

**TB100-0.6S****Performance Data (Per Blower):**

		Design 1	Design 2	Design 3	Design 4
flow at intake conditions	icfm	2,783	2,319	1,392	1,113
flow at standard conditions	scfm	2,400	2,000	1,200	960
intake pressure (absolute)	psia	14.28	14.28	14.28	14.28
differential pressure	psi	6.53	6.45	6.32	6.00
relative humidity	%	80	80	80	80
intake temperature	°F	104	104	104	104
discharge temperature	°F	199	194	194	192
power required at the blower shaft	bHp	100.0	78.6	47.1	37.1
energy required to the <b>UNIT</b>	KW	81.0	63.6	38.1	30.1
Tolerance on flow & power	± 5 %				
motor rating	Hp	100			
Sound pressure level w/ enclosure	dB(A)	< 81	< 81	< 81	< 81
measured in free field at 3ft. distance from the outline of the unit (tol. ± 2 dB(A)).					

**Weights & Dimensions:**

Inlet connection	ANSI	12"
Discharge connection	ANSI	10"
Motor cooling connection	ANSI	2.5"
Blower torso weight	lbs	1345
C Type Envelope dim.*	LxWxH in.	74x42x70

\* non binding dimensions includes, discharge silencer, relief valve, check valve, and flex connector  
3 ft space is required around the blower for service and maintenance.

**Aerzen Turbo Blower package consists of the following components, completely assembled in our factory.**

- 1 Aerzen Centrifugal Blower TB Series
- 1 bump air foil bearings
- 1 high speed PM motor
- 1 inverter
- 1 sound enclosure
- 1 PM motor cooling system
- 1 enclosure integrated air filtration system
- 1 Blow Off Valve
- 1 BOV silencer
- 1 pipe insulation, internal
- 1 CPU
- 1 LCP (MICOM control, Touch Screen)
- 1 protocol gateway, Ethernet IP
- 1 set of necessary sensors (temp and pressure)

**Scope of Supply**

- 2 compact blower package as listed above
- 2 passive harmonic filter (ships loose to be installed by others)
- 2 check valve (ships loose to be installed by others)
- 2 discharge silencer (ships loose to be installed by others)
- 2 BOV discharge silencer (ships loose to be installed by others)
- 2 set of spare enclosure filter elements
- 2 flanged flexible connector ANSI 150#, discharge
- 2 flanged flexible connector ANSI 150#, intake (ships loose to be installed by others)
- 2 external intake hood filter/silencer (ships loose to be installed by others)
- 2 domestic packaging
- 2 freight to jobsite
- 1 day mfg onsite services (addl days \$1,800/day )

TOTAL for 2 unit(s)

c/o: Woody G. Wolff fo Drydon Equipment, Inc. (224) 629-4060

Pricing: FCA Coatesville, PA 19320, Freight allowed

Terms: This offer is subject to Aerzen Standard Terms and Conditions (A2-001-USA January 2009)

Submittals: 2-3 weeks after receipt of Purchase Order

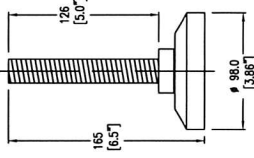
Payment: 20% upon receipt of approved submittal, 75% upon shipment Net 30 and 5% retention not to exceed 120 days from shipment.

Delivery: presently approx. 4 months upon technical release by customer

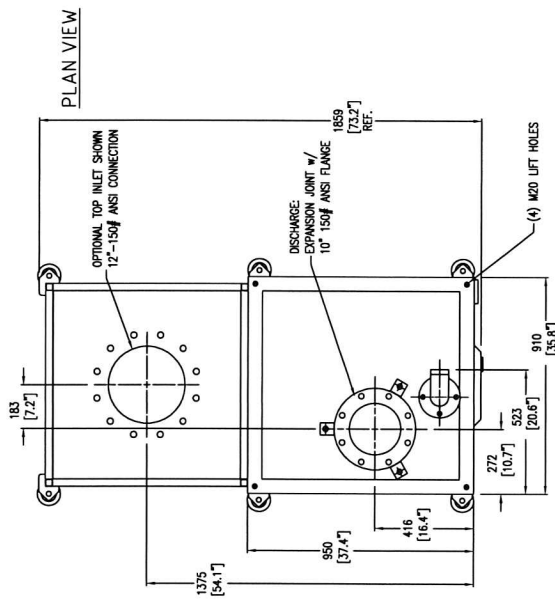
Warranty: 24 months after start up or 30 months after delivery, which ever comes first\*

\*Maintenance must be performed per the Instruction Manual using Aerzen spare parts.

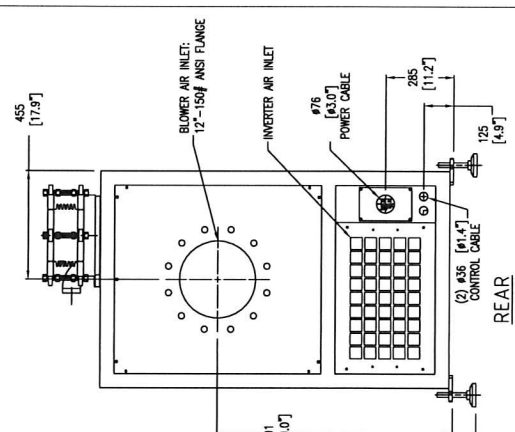
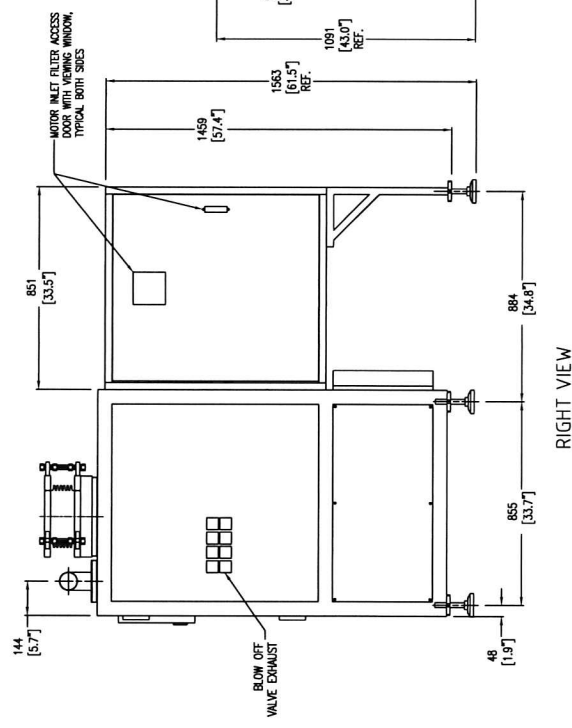
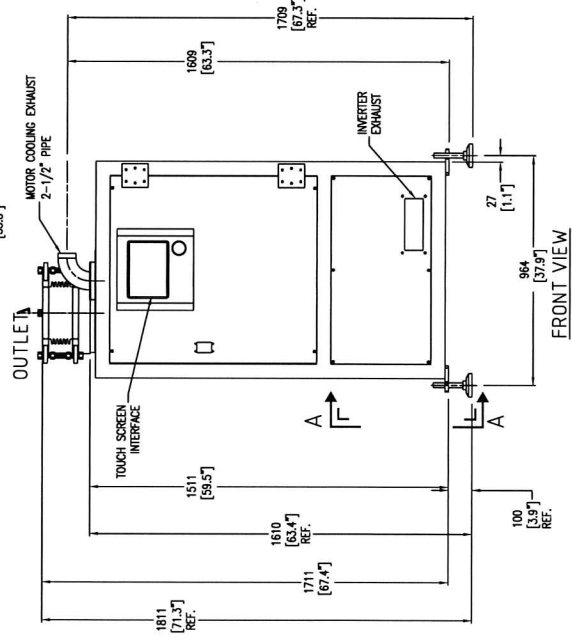
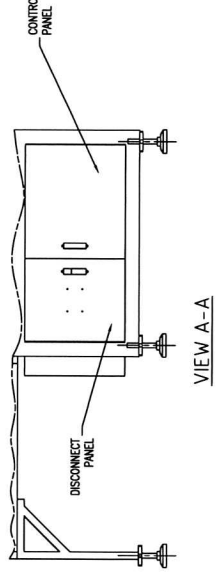
\*Equipment not manufactured by Aerzen will carry the manufacturer's standard warranty



ADJUSTABLE FOOTING



- NOTES**
1. TOLERANCE ON DIMENSIONS =  $\pm 12\text{mm}$  [0.5"]
  2. WEIGHT: BLOWER PACKAGE WEIGHT 650 Kg. (1432 Lbs.)
  3. CUSTOMER PIPING TO BE INDEPENDENTLY SUPPORTED
  4. LIFTING OF PACKAGE: WITH FORKLIFT, OR VIA (4) EYEBOLTS, ONE IN EACH CORNER OF THE TOP OF THE MACHINE
  5. ALLOW APPROX. 915mm [36"] FREE SPACE FOR MAINTENANCE ON ALL FOUR SIDES



**AERZEN USA CORP.**  
 100 W. WILSON AVE. #100  
 AERZEN (610) 389-0244 FAX (610) 389-0278 TX  
 TITLE TURBO BLOWER ASSEMBLY W/ DUCTED INLET & FILTER  
**TB100-0.6S**  
 10" - 150# ANSI FLANGE DISCHARGE

DATE	DESIGNED BY	SCALE
US/12/13	JPS	1:1
DRAWING NO.	REVISED BY	REVISION NO.
GB-006059-100-0.6	DJM	A

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