



The Synthesis Of  
**TECHNOLOGY**  
*& idea*



**PV Vacuum Engineering Pte Ltd**  
(A member of Darco Water Technologies Limited)



**DARCO**

Water Technologies Limited  
Solutions To Water & Waste

“... an *idea* out of the box...”

In the thirties, Jacob Pielkenrood had an idea that led to the first commercially viable engineered solution: **The Tilttable Plate Floator**, bearing the company's name - Pielkenrood-Vinitex B.V., Netherlands - in 1938.

A Typical Client Profile - Electronic Production Facility - Singapore ( Extract of Works from 1997 to 2003)



Central Wet Separator For Wet & Dry House Vacuum Cleaning System - 2x40Hp (Completed 1997)

Central Contamination/Scavenging Vacuum System - 12000 SCFM - 2x132 KW Vacuum Exhauster (Completed 2002)

Central Oil Lubricating Process Vacuum System - 4x15KW (Completed 1997)

Central Oil Free Process Vacuum System - 4x90KW Liquid Ring Vacuum Pump (Completed 2003)

Today, Jacob's philosophy continues to inspire us to think out of the box as we forge to challenge the conventional, the accepted and the ordinary. Original ideas give our clients genuine choices, allowing them to decide precisely how they want to manage their vacuum applications or live their lives. In the process, we find better ways of doing things with our partners by making certain that technology remains a slave to man, and not the other way around.



The result, an extensive range of vacuum and vacuum conveying process for industrial, commercial and consumer applications were developed: Centralized Vacuum System for Pick & Place; Hold Down, Contamination Control or House Keeping For High Tech Production Environment such as Wafer Fabrication; Store Media; Disc Drive Assembly Plant and Other Clean Room Production / Life Sciences Research Environment.



, the brand that we market our Consumer Vacuum Application System, speaks volume for the informed few who owns it. Together with our partner - we have engineered the Finnish Origin System to suit the Asian climate and culture. It represents innovation, a break from the norm, to solve environmental problems in our everyday life.

*Things are not always what they seem*

QUANTITY cleaning does not necessarily provide a clean ambience. Only QUALITY cleaning does. PUZER's Quality Cleaning Concepts ensure a 'Dust-Free-Interior', ensuring that the work is completed much faster resolving most indoor air quality problems, providing clean air for breathing.

*Integration... Just another word for making life easier*

Intelligent Integration is a meaningful combination, introducing 'recycling' into our daily life. PUZER offers you everything you need in one place, making it just common sense to dispose of the respective waste at the respective place. With PUZER, you save time and energy. Instead of moving bulky waste by cleaners, simply push a button and 'viola', the contaminated air and waste are being whistled off into the pipe instantaneously - stored or packed and ready for the appropriate recyclable waste collector to purchase. It's that simple, if you do not mix, you do not sort.

Pick-up waste bag



Put in Dump point

Quality  
versus  
quantity  
... equals winning  
solutions...



Waste recycling Made Simpler for Residents of ISO OEMENA (Big Apple) Mixed Developments - Office Tower + Shopping Malls + 3 Residential Blocks - Finland (Installed By Protekno Puzair Oy 2002)

Press the Dispose button



Vacuum Cleaning Inlet installed at Lift Lobby



Puzer Clean System for Singapore Press Holdings HQ - 65,000sq.m - 10 floors Highest Tower (Completed 2002)



Two-Stage Filtering System Gives Hepa Quality discharge air meeting PM2.5 - Air Quality Standard.

PV Vacuum Engineering capabilities encompass the following:

### 1. Plant/Project Advisory Capability

Our experienced staff are able to provide an unbiased advisory service on the selection of any combination of Vacuum Products to meet our customer's exact requirements. Thus, our customer is able to:

- a. assess the most appropriate Vacuum System Application Solution
- b. assess the utility requirement of different Vacuum System Application Solutions
- c. prepare budgets for capital and running costs thereby ensuring the viability of the project

In the case of Contractors, it allows them to put forward a competitive tender to their Client.

### 2. Art Of Modern Living (Lifestyle System)

Developed for customers who appreciate quality over quantity, PV Vacuum Engineering has a series of innovatively engineered environmental solutions to suit the different lifestyles of people in any society or country, marketed under the Trademark 'PUZER'.

- a. **PUZER Perfect**  
Quality Cleaning Innovation for quality conscious people.
- b. **PUZER Clean**  
Ultimate Cleaning Concepts for developments, organizations or places that demand Quality Cleaning, not Quantity Cleaning.
- c. **PUZER Protect / XMIT**  
The unique feature of any modern day Metropolis Building is its ability to manage its own solid waste and not burden society with it. PUZER Protect is the system that protects the environment that modern buildings adopt. It automatically segregates solid waste into the appropriate recycling form.
- d. **PUZER Unconventional**  
Unconventional solutions for refuse handling for conventional buildings or developments which equip them to carry out efficiently the daily functions in the modern day world.

### 3. Facilities Automation - Central Vacuum System

With the ever changing demographic profiles and technological advancements of many countries, Utility and Consulting Engineers are constantly faced with new challenges.

PV Vacuum is able to provide a single Vacuum Facilities/ Utilities Responsibility Solution with complete Know-how, from planning, design, installation and testing to commissioning of the following systems:

- a. Central High Vacuum or Process Vacuum Pump Package or System for Electronic Plants and other Clean Productions for Pick and Place, Hold-Down, Research Laboratory, etc.
- b. Central Low Vacuum or House Vacuum System or Pump Package for general up-keeping of Clean Room, Workshop, Research Laboratory, etc.
- c. Central Scavenging Vacuum/Contamination Control System or Pump Packages for point-of-use extraction requirements in any Clean Production to meet either environmental health or production yield demands.

**4. Process Solutions - Customized Vacuum Package**

PV Vacuum offers a single source for any Vacuum Package built to meet specific demands of any Process Industry, Power Station, Life Science Facility or Biological Research Laboratory, etc.

Together with its partners, PV Vacuum is also able to offer solutions to meet technically stringent International Standards such as EEMUA or API681 or SEMI F47 developed to give end users Enhanced Operational/ Production Reliability Assurance at Minimum Maintenance Expense.

**5. Customized Solutions**

PV Vacuum is well placed to assist any customer with a New Vacuum Application that needs customized solution because of:

- a. its vast experience in the installation of Vacuum Plants throughout the world and;
- b. its experience gained from the customer's operation of their plants.

**6. Technical Support**

PV Vacuum maintains a team of experienced hands-on service engineers who provides professional advice, support or on-site assistance to resolve any Vacuum Application hiccups.



3x Vacuum Pick-up System for Waste/ Dirt Conveying, incinerating plant via Mitsubishi Heavy Industries Ltd (Completed 1999)



Integrated Vacuum Pump / Compressor / Scrubber Package Supplied to Chemical Facility via Chiyoda Corporation (Completed 1999)



Disposable Refuse Chute System



Hidden Refuse Container being raised



Filled Refuse Container being removed

# "Customer Satisfaction"

.. a fundamental philosophy..

In focusing on its fundamental philosophy and approach to any appointed project, PV Vacuum Engineering continuously offers a service of excellence that sees the project through from inception to beyond.



Puzer Protect System Installed for 30floors (60,000 sq.m) Ministry of Education HQ Building for Waste Paper Recovery Integrated with Central Vacuum Cleaning (Completed 2000)



Award for Air Quality & Energy Optimization By Institute Of Engineer



Vacuum Cleaning Inlet



Waste Paper Collection Point



Bin Centre with Waste Paper & Other Waste stored separately

## Customization

New idea is often an impossibility until it is born. Many of our dreams tend to be mere fantasies. But often we find that almost everything is possible if we are willing to try - and try again, Why adapt to technology when technology can adapt to you?

Our process of developing a Customized Solution is guided by two words: Dialogue & Listening. Everything we do is base on this concept. Not only dialogues are carried out between engineers and designers; you and us, but also an ongoing dialogue with the world. We look for ideas and solutions in places where our industry had never been before. Working together with our partners from all over the world, as we bring your objective to vision and our passion into experience while we try to prove once again that the limit of technology is sometimes imaginary.

When ideas originate and at first glance seem incompatible with the world, we make it our responsibility to research the ultimate means through the labyrinth of technological possibilities, to create unique solutions to meet and achieve every one of your stringent request.

## Trusted reliability

PV Vacuum Engineering has earned its 'Trusted' stamp of approval from its 'blue chip' customers for reliability and professionalism on and after the completion of a job. Together with our partners who lead in the field of Vacuum Process and Application Systems, we provide only the best - materials, solutions and installations - making this 'trademark' possible. After sales service capabilities is further supported by our team of fully trained technical staff.

## Satisfied customers

PV Vacuum Engineering has undertaken projects spanning Hong Kong, Taiwan, China, Philippines, India, Indonesia, Malaysia and Singapore, the majority of which have come to us through references. It strives on contributing to the customers' cost efficiency objectives as well as to ensure total customer satisfaction.

# Engineering towards a healthier environment

... at home and the work place..



IBM - Kaki Bukit



Chartered Semiconductor Wafer Fab



National Starch - Thailand



Angsana Malls Operating Facility Woodlands Loop



Advanced Micro Devices - AMD Production Facility - Chai Chee



BASF Plant - Malaysia



ST Microelectric Wafer Facility - Ang Mo Kio



Ministry Of Foreign Affairs Singapore



Minex Bawari - Malaysia



Xing Guo Hotel - Shanghai



中央电视台广播电视音像资料馆 Beijing, China



北京国际新闻中心 Beijing, China



The Twins Condominium



Changi Heights 3 Storey Houses



北京长富宫饭店 (五星) Beijing, China



国家电力调度中心 Beijing, China



新美中银大厦 China



钟岗国际公寓 Beijing, China



Bungalow - Ford Avenue



Biopolis - Life Science Research Hub, Singapore



Nanyang Technological University - Technological Plaza Building



世纪村, 深圳 Century Village, Shenzhen, China

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KISMA - Modern Art Museum



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