



Get Ready for the...
Re³ Revolution!

Working for a
Cleaner World

Re³

Resource, Recycling & Recovery...

FROM LEFT TO RIGHT: IRISH AMERICAN ENTREPRENEUR, BRENDAN HUGHES; RE3 CEO, PROFESSOR DEBORAH BOYD, AND TECHNICAL DIRECTOR, BRIAN SHANLEY



Re³ Welcome to the Re³ REVOLUTION

Resource, Recycling & Recovery...



Re³ BIOMASS PELLETS AND FIBRE

James Watt was a Scottish inventor and mechanical engineer whose improvements to the steam engine sparked the Industrial Revolution. Watt's fertile imagination and inventiveness transformed the workplace and changed the world. He not only helped to build a new economy but provided a platform that would inspire future generations of engineers and inventors.

Today, Watt's spirit shines brightly. Not, as you might expect, in Britain's post-industrial heartland - but in the historic city of Limerick - the home of the Re³'s new showcase steam treatment recycling plant. And, like Watt, the Re³ Group is about to change our world.

The €15million Re³ facility, in Limerick, draws on Watt's great legacy, as well as the work of French Microbiologist, Charles Chamberland (1851 -1908). Chamberland invented the 'autoclave' - a pressure cooker that sterilises medical instruments. What's revolutionary about Re³ is that they have successfully combined both autoclave and contemporary steam engineering to create an industrial process that transforms waste into valuable, biomass fibre - an eco-friendly alternative to fossil fuels. Their recycling process is so effective; Re³ says it is capable of recovering and recycling up to eighty-five per cent of waste currently destined for landfill.

When you visit the Re³ facility you know history is in the making. Two giant silver tubes - resembling rockets from NASA's Space Flight Programme - rotate horizontally in the centre of the plant. They are the ECOclaves - two giant cylindrical pressure cookers that use recycled steam to gently 'cook' up to twenty tonnes of waste each.

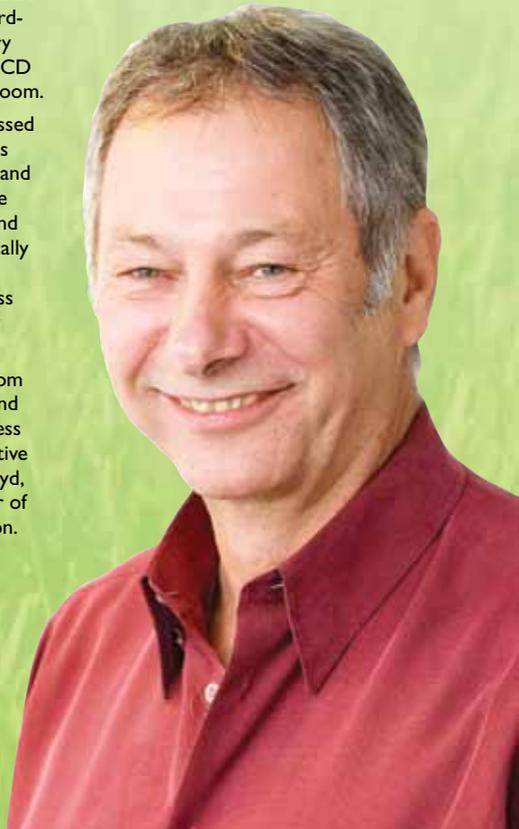
The waste is fed to the ECOclaves by conveyors. The steam is charged through a labyrinth of huge boilers and insulated pipes. Above, hard-hatted engineers monitor every stage of the process from an LCD tiled, state-of-the-art control room.

Within a few hours, the processed waste - now cellulose fibre - is removed from the ECOclaves and carried to a sorting area where de-lacquered metals, plastics and other fragments are automatically removed for recycling. What remains is clean, brown biomass fibre ready to be pelletised for heat and power generation.

It's a process that's resulted from sound engineering, creativity and commitment - the core business principals of Re³'s Chief Executive Officer, Professor Deborah Boyd, and Chief Engineer & Designer of the Wilson System, Tom Wilson.

Vision

Professor Boyd is a bright, dynamic executive driven by her vision of a Re³ future where homes and industry are powered by what we consider today as waste. Tom, on the other hand, is a reserved Yorkshireman who traces his steam engineering heritage back several generations to an age when James Watt walked the streets of Birmingham.



TOM WILSON, CHIEF ENGINEER & DESIGNER OF THE WILSON SYSTEM

**"I sell here, Sir, what the entire world desires to have— POWER."
James Watt (1736 -1819)**

"Our Re³ facility is a showcase for next generation, industrial recycling and recovery. What we are doing here is revolutionising how we treat domestic waste," Professor Boyd says. "Every year, we discard more and more waste. Yet, recycling rates remain the same. Re³ has developed a safe and sustainable process that will not only vastly improve recycling and recovery rates, but provide much needed industry and jobs as well," she adds.

For Chief Design Engineer, Tom Wilson, the Re³ facility is the proud result of a lifetime love affair with steam.

"They said steam was dead but steam power is still very relevant today and our Re³ facility proves it," Tom says. "This is a clean, environmentally friendly process that produces an eco-friendly product and, all of it is driven by steam. You can come and kick the tyres if you want. It works."

Tom is one of the world's leading experts on steam technology. Steam power conjures up Dickensian images of fiery boilers, whirling machines and tall, red-bricked chimneys bellowing clouds of choking, black smoke. But when you travel to the Group's facility, in

Limerick, or watch the Re³ video presentation (www.re3group.com), you soon become aware of how far and clean steam technology has travelled.

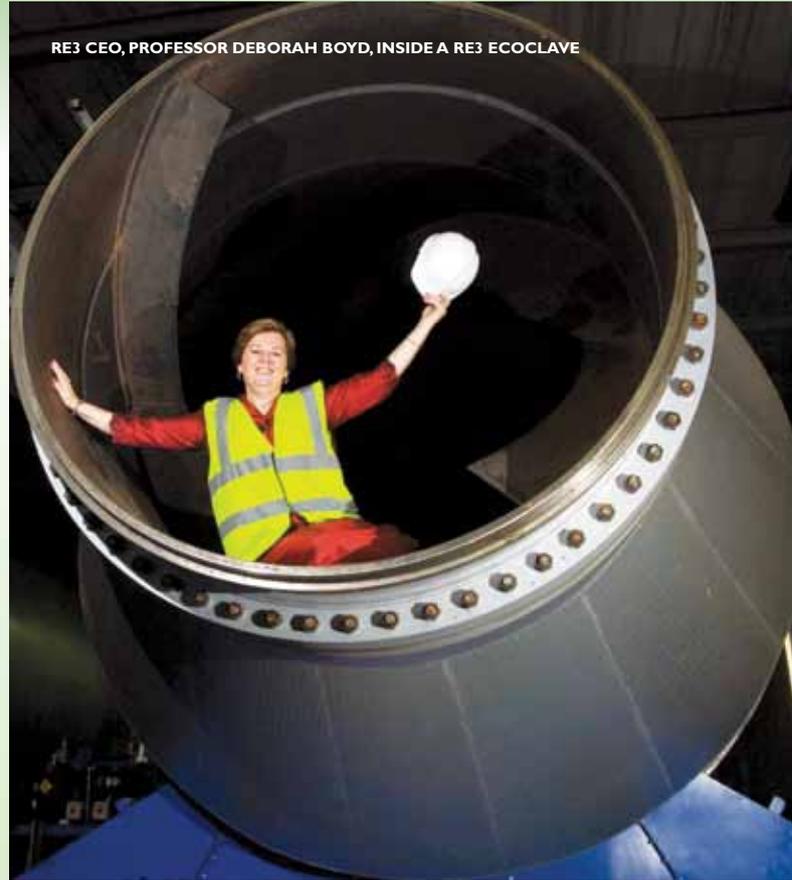
Tom's engineering skill and creativity is evident throughout the Re³ recycling facility. The process itself is called 'The Wilson System'.

"What does everyone want, what do we need? It's energy of course. Without energy, we have nothing. No sun, no rain... nothing. What we are doing in Re³ is using natural energy to transform millions of tonnes of waste into a new, clean, green, sustainable power source.

"We're building a new industry for a new generation using state-of-the-art technology and it's all built on the wonderful legacy of steam," Tom says.

Excellence

Professor Boyd shares Tom's passion for engineering excellence. She moves easily from 'boardroom to bench', swapping her stylish suit and shoes for a sturdy pair of boots, hard hat and fluorescent vest. It is an attribute that's won the Re³ CEO deep respect from the Group's hardcore engineers led by Technical Director, Brian



RE3 CEO, PROFESSOR DEBORAH BOYD, INSIDE A RE3 ECOCLAVE

As in nature, the best designs are often the simplest

Super efficient gas-fired condensing boilers

Key benefits:

- Very high efficiency
- Quiet - low noise emissions
- Easy Maintenance
- No minimum water flow rate
- Fully modulating for improved load matching

Hoval UltraGas®

Condensing Boiler
35 - 1700kW



Energy saving from Hoval

Hoval Limited Northgate Newark Nottinghamshire NG24 1JN United Kingdom

Tel: +44 (0) 1636 672711 Fax: +44 (0) 1636 673532 Email: sales@hoval.co.uk Web: www.hoval.co.uk

Conservation of Energy - Protection of the Environment

Hoval

ARTHUR COX

DUBLIN | BELFAST | LONDON | NEW YORK

Arthur Cox is a leading Irish law firm, with a pre-eminent energy and resources practice.

As the only law firm with a dedicated energy practice in Dublin and Belfast we are uniquely placed to assist our clients in the context of the emerging all-island energy market.

Arthur Cox has the only energy practice consistently recommended by every major independent legal directory in Ireland and Northern Ireland, setting us apart from our competitors.

For more information on our energy and resources practice, please contact:

Alex McLean, Dublin
Tel: +353 (0)1 618 0546
alex.mclean@arthurcox.com

Alan Taylor, Belfast
Tel: +44 (0)28 9026 2671
alan.taylor@arthurcox.com

www.arthurcox.com

M. Shanley of Shanley Electrical, in Waterford (www.shanley.ie).

"What you see here represents a huge effort." Brian points to the two huge, rocket-shaped ECOclaves named 'Zoe' and 'Julie' – each named in a time honored tradition that, once again, reaches back to the legacy of steam.

"From blueprint to production, we had to design and engineer almost every piece. Then we had to find the right companies to fabricate the components properly before re-assembling them here in Limerick. It really was a global effort.

"But engineering challenges aside, this project is different because we know we are doing something really special here... something that will make a difference," he says.

It's taken just over a year to build the new showcase recycling facility in Limerick. And, its time the Re³ Group has used wisely to refine their revolutionary steam treatment process.

For Professor Boyd, it's the culmination of years of research. Working from a row of offices outside their home in County Armagh, Debbie Boyd and her husband Trevor have spent more than a decade nurturing and perfecting their vision for steam treatment waste recycling and recovery centres.

"I knew that if we used pressure, heat, and steam we could reduce

domestic waste to biomass fibre. Plastics, metals and other recyclables could also be compressed and cleaned. But I also recognised that if I was to get this process out of the laboratory and on to the factory floor I would need a lot of engineering expertise," Professor Boyd says.

It wasn't long before Professor Boyd's research led her to Tom Wilson. Tom had also been experimenting with steam recycling systems and had developed several prototype autoclaves. He had also perfected a Steam Accumulation Process – a system that delivers consistent, uninterrupted supplies of recycled steam to the autoclave chamber.

"I called Tom and within a few minutes it was clear that we were walking along the same path," Professor Boyd recalls. "We formed a partnership and moved forward."

So, as Tom started to connect pipes (very large and very complex pipes), Professor Boyd started to connect people.

"We needed more believers - individuals who would invest their time, effort and financial resources in our dream," says Professor Boyd.

Tom and Professor Boyd shared their expertise and their partnership blossomed. Within a few short years, the Re³ Group was born.

Why KPMG?

"Our enterprising approach... it attracts Ireland's most dynamic businesses."

Paul Hollway, Corporate Finance Partner

KPMG are trusted business advisors to many of Ireland's most successful companies.

To find out more about how we can help you rise to the challenge of today's business environment call Paul Hollway in Belfast on +44 (28) 9024 3377.

www.kpmg.ie

KPMG



AUDIT ■ TAX ■ ADVISORY

© 2009 KPMG, a partnership and a member firm of the U.S. KPMG network of independent member firms affiliated with KPMG International, a Swiss cooperative. All rights reserved.



Shanley Electrical Contractors

Electrical/Mechanical Contractors & Engineers

EPC Contractor to RE3 Group

ELECTRICAL SERVICES

- *ATEX Services*
- *Commercial Installations*
- *Contract Maintenance*
- *Data Communications and Wireless Services*
- *Design Services*
- *Earthing and Lightning Protection*
- *Fire and Security Protection*
- *Industrial Installations*
- *Medium Voltage Applications*
- *P.A & Call Systems*
- *Power Factor Correction*
- *Certified Installations & Maintenance in Potentially Explosive Atmospheres*
- *Process Control*
- *Instrumentation*
- *U.P.S. Systems*

MECHANICAL SERVICES

- *ATEX Services*
- *Air Services*
- *Commercial Installations*
- *Contract Maintenance*
- *Design Services*
- *Gas Services*
- *Heating and Plumbing*
- *H.V.A.C.*
- *Industrial Installations*
- *Certified Installations & Maintenance in Potentially Explosive Atmospheres*
- *Process Pipework*
- *Stainless Steel Fabrication*

TECHNICAL EXCELLENCE DELIVERED WITH INTEGRITY

ICAT

Information, Communication & Automation Technologies

Essentially the premise for ICAT is the recognition by Adapt Irl. that modern commercial real estate is evolving from an environment of disparate building networks to an open standards building network which can be IP connected.



Shanley Electrical Contractors Ltd.

Ballygagin, Dungarvan, Co. Waterford, Ireland

Tel: +353 (0) 58 41721 / 42361 Fax: +353 (0) 58 44680

E-mail: info@shanley.ie www.shanley.ie

Impressive

Irish American entrepreneur, Brendan Hughes, is one of Re³'s greatest supporters. Brendan and his family travelled to Limerick to see the new Re³ Recycling plant for themselves.

Walking through the facility with his daughter Shelia – an environmental business student - Brendan was clearly impressed by what Re³ had achieved. "This is impressive. I always believe that Debbie could make this happen. You rarely meet people like Debbie Boyd and Tom Wilson but, when you do, you'd better get behind them and support them because you know they are going to create something really special... and, here it is..."

The construction of the Re³ recycling facility has not been without its fair share of difficulties. From navigating complex environmental legislation to planning new sites, Professor Boyd takes it all in her stride.

"This is a new industry, a new process and we have to take time and explain to everyone what we do and how we do it," she says. "The local community, in Limerick, has been very supportive. When people visit the plant, we show them that we don't burn or bury waste - we offer a cleaner, more sustainable alternative to incineration and landfill. They also see that the Re³ Process is self-contained, sterile and safe."

Professor Boyd is an adept communicator and when you meet her, you'll get her undivided attention, but you can't expect it. Debbie Boyd is a woman in demand. Engineers and PAs sweep through her office; telephones ring, cell phones buzz and Blackberries beep. It's just another day at Re³... Frank and forthright, Professor Boyd put her skills to good use in



THE RE3 ECOCLAVE THAT TRANSFORMS UP TO TWENTY TONNES OF WASTE INTO VALUABLE BIOMASS FIBRE

both the public and private sectors. Politicians seek advice; journalists request interviews and businesses sense opportunity. And, that's one of Professors Boyd's greatest strengths – her ability to keep in touch, bring people together and create partnerships to make things happen. Re³'s newest partner, for example, is Greyhound Recycling and Recovery Limited – Ireland's leading waste management and environmental services group. Greyhound will be a Re³ principal supplier securing yet more jobs, in addition to the fifty people that will work in the Re³'s Limerick recycling facility.

"Waste recovery and recycling, and the new energies they produce, is one of the fastest growing industrial sectors. Socially, politically, environmentally we can't afford to ignore that," Professor Boyd says.

"If we want a cleaner earth and a new, green industry that will provide jobs and wealth for our children and grandchildren we need to 'step up to the plate' today and start building it. That's what Re³ is all about.

"We are rapidly filling our landfill sites and there are only so many holes you can dig in Ireland! Even if everyone recycles their domestic waste, it doesn't solve the problem... but Re³'s new waste treatment technology will help. "Our process is clean and green; it's an alternative energy source; it creates new jobs, increases recycling rates and puts Ireland at the forefront of a new industry. It also reduces our carbon footprint and will help us to meet EU Environmental Directives."

Silicon Valley has a new neighbour now... they're green, they like sunflowers and they're called Re³...

for Combined Heat and Power Units (CHP). It's a real, green power option for municipalities, businesses and industry."

The Re³ logo is a sunflower. And, there is nothing that can quite lift the spirits like a tall, radiant sunflower. It's bright, cheery

and, as the name suggests, reflects so many of the characteristics of the sun – the star that powers the earth. It's easy to become cynical in an age where the world appears to have gone half crazy. But the Re³ success story is, at least, one ray of light that should be a source for celebration. Silicon Valley has a new neighbour now... they're green, they like sunflowers and they're called Re³.

RE3 BIOMASS FIBRE IS USED TO GENERATE POWER AND HEAT



The Future

The Re³ Group has plans to build more recycling facilities in Ireland and further afield. The Group is already talking to decision makers in the USA and Canada.

"How we manage and recycle waste is a global problem and Re³ technology is capable of transforming all non-hazardous municipal, commercial, industrial and agricultural based waste. The process is also very efficient because it reduces the volume of waste by as much as eighty per cent, producing biomass renewable fuel

Contact

For more information about the Re³ Group please go to www.re3group.com where you can watch a full video presentation explaining Re³'s Revolutionary Recycling Process.

Email: info@re3group.com
Tel: +44 28 3887 2020.