

Creating Value through **Innovation**

Glass Packaging Solutions

www.ardaghgroup.com

Innovation matters at Ardagh

At Ardagh we have a passion for innovation and creativity; qualities which have positioned us as a world-leading packaging business.

We are constantly embracing new technologies and developing product ideas to benefit our customers and their products in novel and exciting ways. We believe the possibilities for achieving outstanding packaging designs are virtually endless.

Innovation within Ardagh
is more than a process,
it's a culture.

Our mission

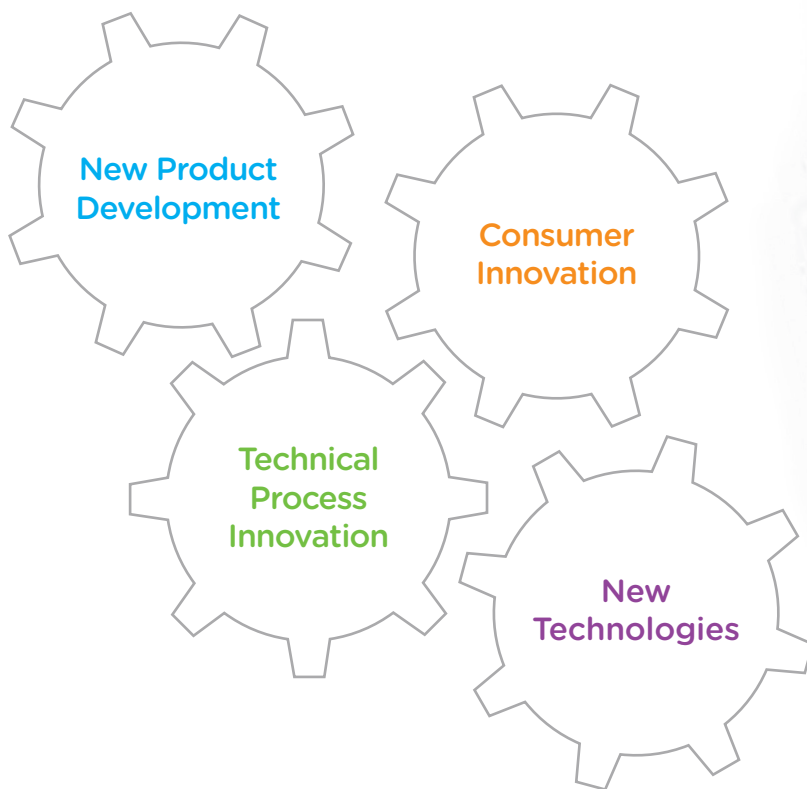
To be the market leader in glass innovation and the first choice partner for innovation projects.

For further information visit www.ardaghgroup.com

How we Innovate

Our innovation programme harnesses the power of a cross-functional team, which includes members from our key regions and business functions. Our focus is on being reactive as well as proactive and we drive an innovation agenda across new product applications, process and sustainability improvements.

The result is creative thinking throughout the organisation, from design to delivery, so each integral part of the business feels the benefit and our customers reap the rewards.



Regional Design Centres

Focus on new product development in response to a customer brief.

Central Technical Services, Operational Excellence Group & Quality Teams

Technical process innovation to optimise efficiency, improve quality and reduce costs.

Core Innovation Team

Use market trends and consumer insights to drive new ideas.

Group R&D Teams

Long term development of new products, processes and technologies.



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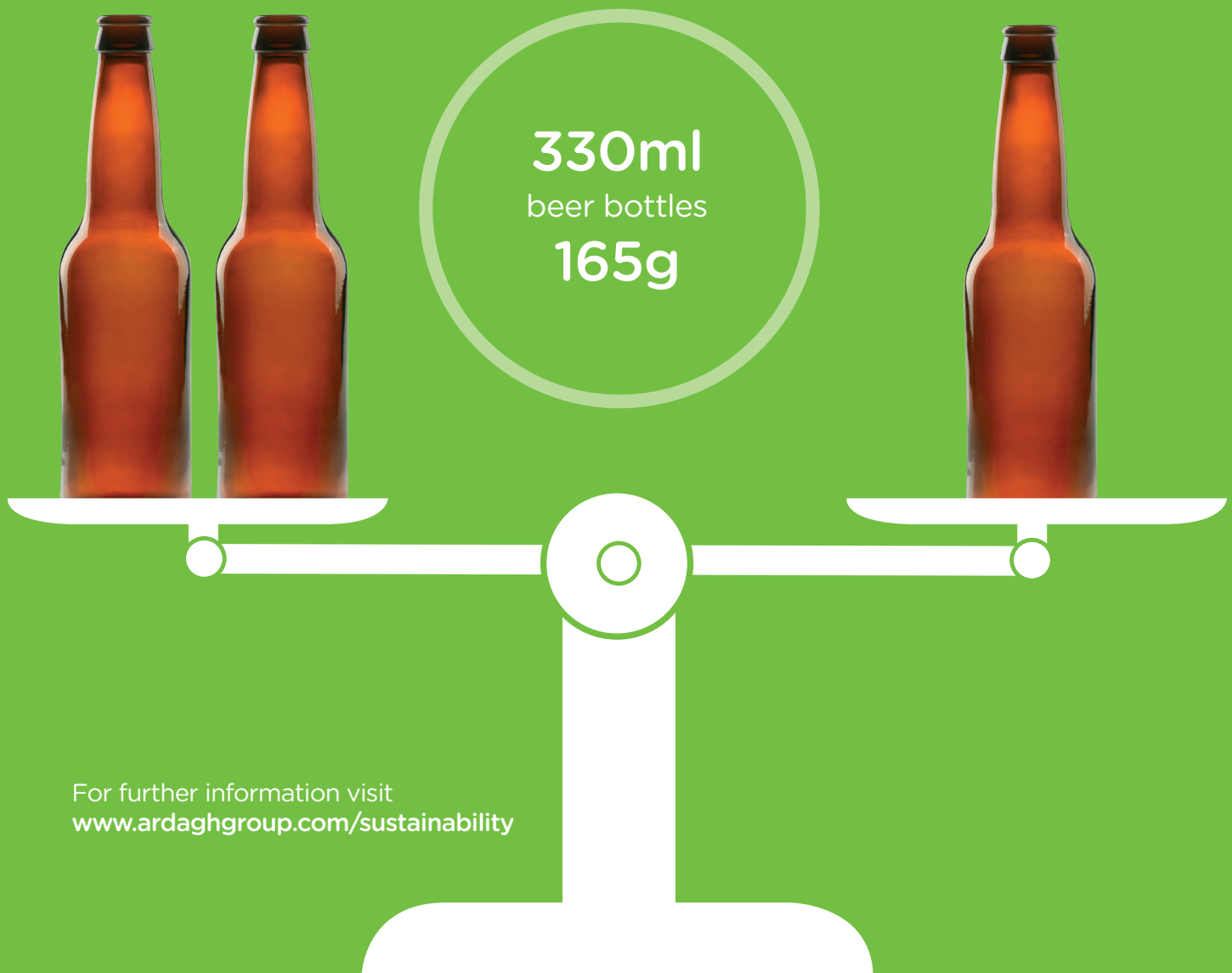
Innovation in Lightweighting

Many bottles today are up to 50% lighter...

Twenty years ago a typical 330ml beer bottle weighed 330g; Ardagh now produce a number of 330ml glass beer bottles that weigh 165g.

At Ardagh we set industry leading standards and we're the forefront of glass lightweighting technology. Using cutting-edge design software and manufacturing precision to distribute weight more evenly around the container's surface, we can produce containers that are significantly lighter and stronger than they were in the past.

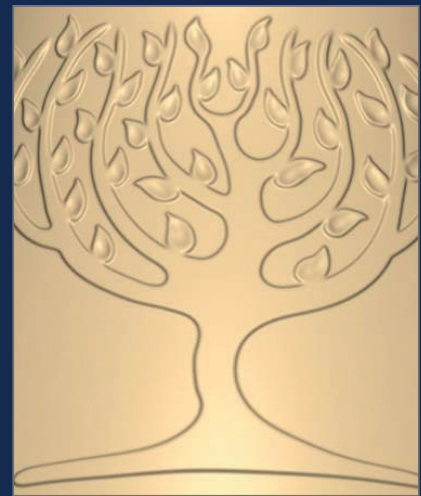
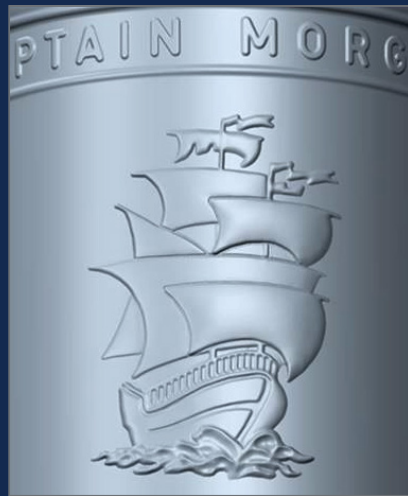
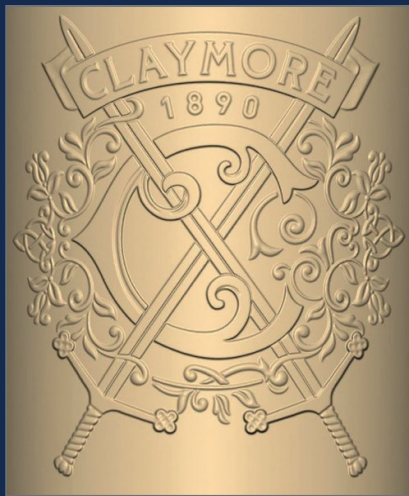
Glass is sustainable, 100% and infinitely recyclable, making it the perfect packaging choice for today's products and tomorrow's.



For further information visit
www.ardaghgroup.com/sustainability

Innovation in Technology

With design facilities located in key regions across Europe and the US, Ardagh Group uses a wide range of technologies for adding value to brands.



Sculptured Embossing

We are now taking the quality of embossed features on the surface of a glass bottle or jar to a far higher level of detail.

The process uses a haptic device to manually sculpt details on the surface of the glass container, enabling our designers to add artistic flair to achieve lifelike detail. A wide range of different textures, features and other enhancements are made possible by allowing our designers to tug, pull, carve and smooth the 3D model by hand in ways which are not possible with conventional embossing.

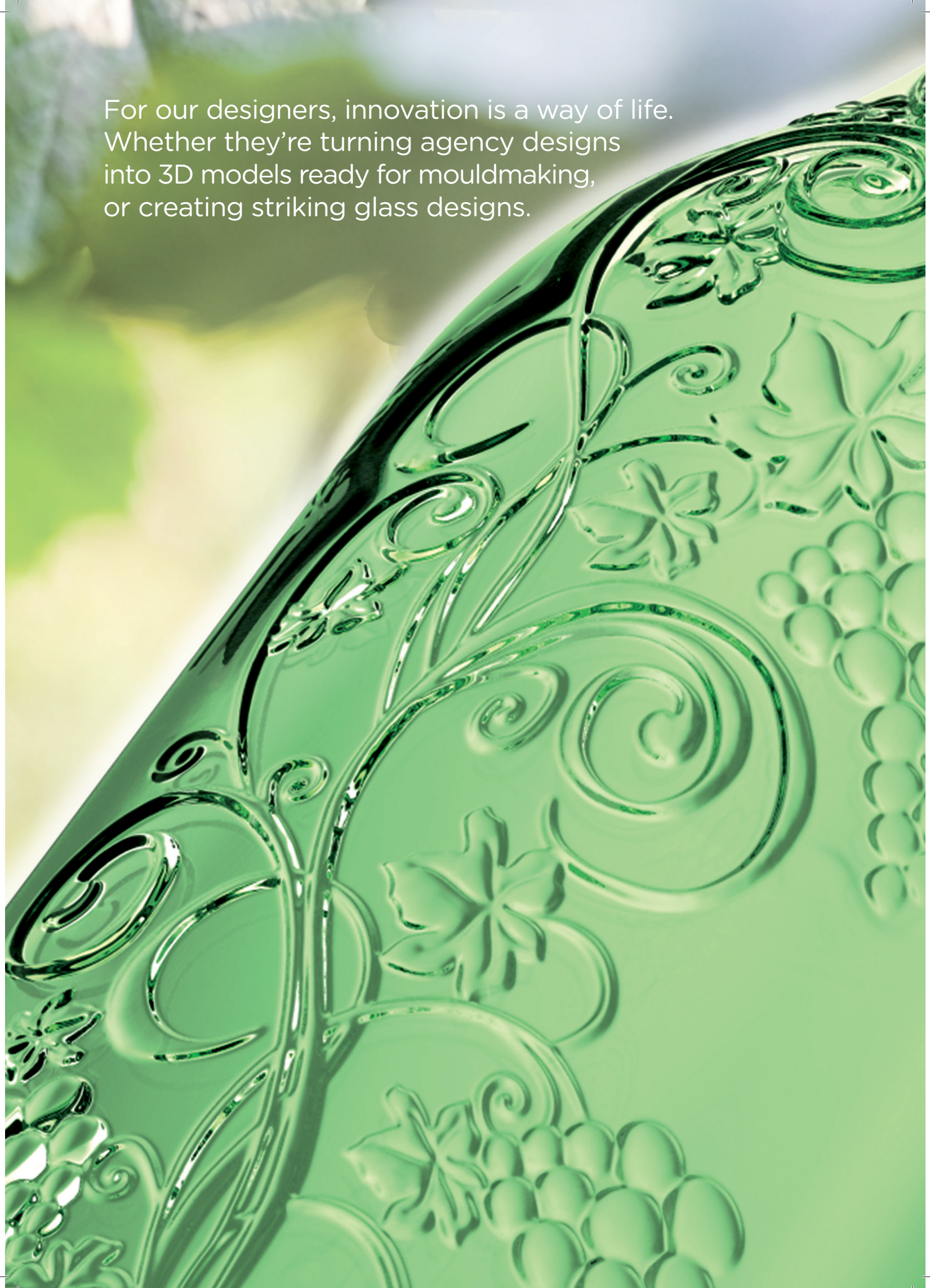


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Innovation in Design



For our designers, innovation is a way of life. Whether they're turning agency designs into 3D models ready for mouldmaking, or creating striking glass designs.



Innovation in Decoration

We are developing packaging that continually improves the customer experience.

Decoration

We spend time researching what really matters to consumers, pushing the boundaries of what we can achieve technologically to produce eye-catching bottles and jars that stand out on the shelf.

With the largest range of state-of-the-art decoration facilities in Europe, we can create endless possibilities for adding brand value.

Endless decoration possibilities through:

- Embossing
- Screen Printing
- Colour Coating
- Powder Coating
- Thermochromic Inks
- Aromachromic Inks
- Pressure Sensitive Labelling
- Steam Slewing
- Metallic Effects
- Satin Etching
- Hand Application



Hand Application

Surface Texture

Transfers



Embossing

Sleeving



Colours





Innovative



ve Effects

Powder Coating

The latest glass packaging coating innovation involves the application of powder, rather than the traditional method of coating using wet paints. In this process, the powders are electrostatically charged and then attracted to the surface of the earthed glass containers. The use of powder, instead of paint, allows for a wide range of different visual and tactile effects including hammered, metallised, terracotta, sparkle, snowflake and acid etch.

In addition to an enhanced visual and tactile appeal this process provides a more robust or durable finish, and is also safe and sustainable using 100% organic products, with no VOCs.

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For enquiries please visit: www.ardaghgroup.com