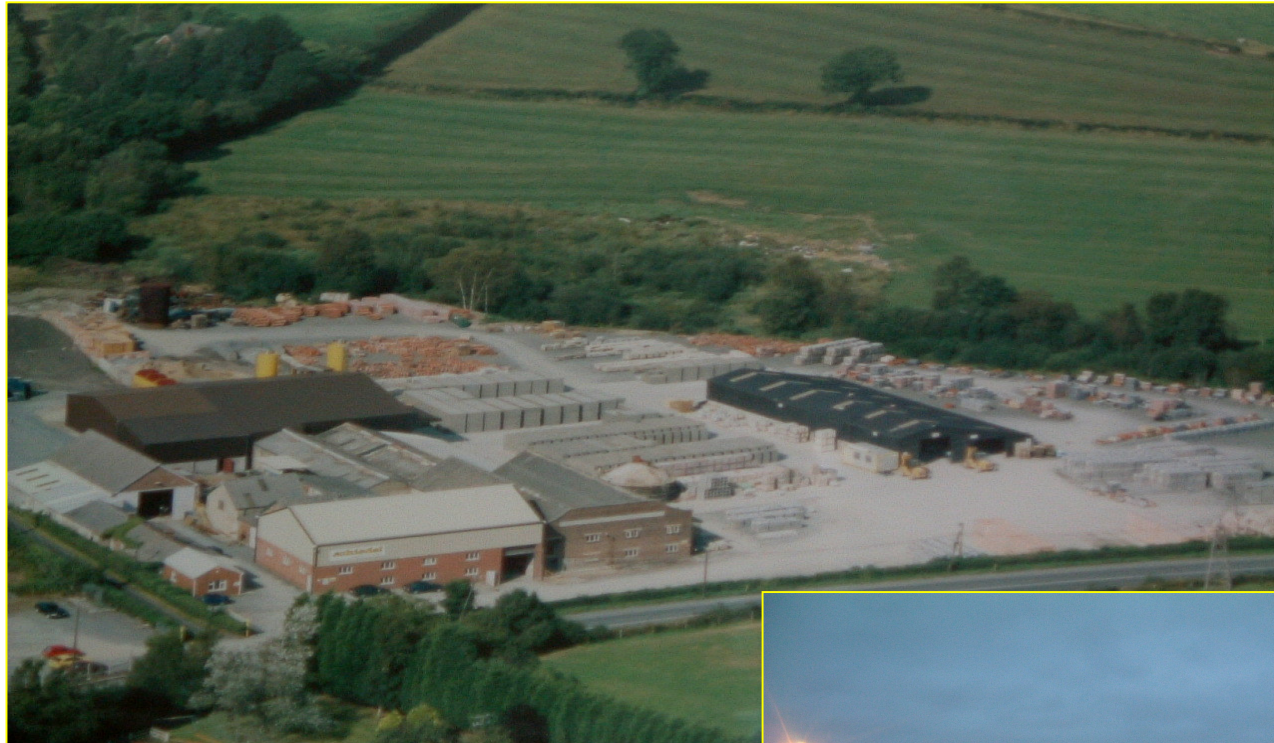


SCHIEDEL



At a Glance

Schiedel manufactures chimney systems for the construction industry.

This project was to redesign the chimney system to produce a factory assembled 'Storey High' product rather than supplying the chimney system in component kit form.

The new system eliminates packaging since it is transported to site in re-useable metal cradles, replacing the pallets and plastic wrapping of the existing system.

The new system is also assembled in the Schiedel factory rather than on the building site. This increases the quality and accuracy of construction and reduces the amount of materials needed per unit.

The new system also results in a reduction in chimney installation times for builders.

Once the system is 100% implemented at the site the following annual savings will be realised by the company (based on production levels in 2006):

- €258,000 gross cost savings
- 16,000 wooden pallets eliminated
- 28 tonnes plastic hoods eliminated
- 18,000 metres insulation material saved
- 18,000 tubes sealer saved
- reduction in shrink wrap gas usage

As at the end of 2006, 12% of sales were of the new system. It is expected to take approximately 4 years to convert fully to the new system.



Photo 1 Existing Swift Chimney System components

CGPP2004/15

Redesign of Schiedel Chimney Systems to reduce Packaging Waste

SCHIEDEL

Schiedel,
Kingscourt Road, Carrickmacross, Co.
Monaghan

The Schiedel company started in Austria in 1947 and is now the market leader in Europe for chimney systems. The Co. Monaghan site, previously Irish Stoneware & Fireclays, was purchased by Schiedel in 2001 to combine with the 1999 purchase of Ulster Fireclays in Co. Tyrone and a 2001 acquisition in Dorset, England. At the beginning of 2002 these three companies were combined to form Schiedel Chimney Systems.

Schiedel's core business is the production of Chimney Systems. The Schiedel Swift chimney system is a versatile product that was developed to suit the open fire and central heating requirements of the UK and Irish markets. Prefabricated chimney systems have been an important feature in the European construction industry for many years. Traditionally this has not been the case in Ireland and the UK where chimneys have been constructed on site with components supplied by different manufacturers. With Schiedel's current Swift system, all the materials required to construct the chimney, the blocks for the chimney base, lintel, the chimney blocks, insulation, flue liners, corbel, coping expansion plate and chimney, are supplied as part of the kit.

Aim of this Project

The aim of the project was to develop a new 'Storey High' modular chimney system to replace the current Swift Chimney System components kit. Basically supplying the chimney in assembled modular sections rather than in kit form.



Photo 2 Existing System Packaged for dispatch

The new system eliminates packaging since it is transported to site in re-useable metal cradles, whereas the existing system uses two pallets with heavy duty shrink wrapped hoods and insulation and sealant supplied separately.



Photo 3 Existing system - Typical waste from one Schiedel Swift System

Project Description

For the new three piece 'Storey High' chimney system each of the three sections was designed, prototyped, cast, tested by external organisations (Schiedel's German Laboratory and at Queens University Belfast) as well as site tested, and introduced to production.

The project required a great deal of research and production trials to perfect the moulds and strength of the large components.

Various transportation cradles were produced by a supplier and tested. The weight of the cradles were reduced by 15% over the course of being developed. The handling, loading and unloading methodology had to be developed. This involved safety issues that had to be accommodated in the overall design of components, cradles and lifting points.

The practical implications and suitability of the transportation and installation process were checked by meetings with transport and site installation people. A key measurement is that the new chimney system can be installed in 1.5 hours compared to 8 hours for the current Schiedel Swift kit system.

The product was installed and tested in a variety of sites around the country. There were open days held for building contractors at both the factory and on building site demonstrations.

Achievements

The new system is factory assembled which increases the quality and accuracy of construction and reduces the amount of materials needed per unit. The new system also results in a reduction in chimney installation times for builders.

The successful implementation of the project has resulted in a significant reduction in waste as itemised in Table 1 once the new system has fully replaced the current system.

Environmental Savings Per Year	
Wooden pallets eliminated	16,000 units
Plastic hoods eliminated	16,000 units or 28 tonnes
Reduced use of Insulation material	18,000 metres
Reduced use of sealer material	18,000 tubes or 750 kg

Table 1 Environmental savings*



Photo 4 New system - factory assembly

The reduction in product cost based on the current system will be significant as shown in Table 2 but this will be offset to a significant degree by the costs of the new system and the supply of metal cradles etc.

Cost Savings Per Year	
Reduction in Pallet Costs	€135,000
Reduction of Plastic Hoods	€65,000
Reduction of Insulation Material	€41,000
Reduction of Sealer Material	€12,000
Reduction in Gas Usage	€5,000
Reduction in Pallet Costs	€135,000
Reduction of Plastic Hoods	€65,000
Total	€258,000

Table 2 Cost savings*

In addition to the above, factory assembly has reduced the time to install a chimney system from 8 hours to 1.5 hours which is very significant in terms of the overall cost of the chimney system to the builder.

In June 2006 Schiedel Carrickmacross came joint top out of 25 plants within the Schiedel group in the area of safety and environmental awareness. This was achieved in spite of the Carrickmacross plant being much older than most of the other plants which are located across Europe.



Photo 5 New system being dispatched in custom metal cradles which are reused

Observations

Schiedel has found the whole process of concentrating on waste reduction as a "complete eye opener" for a company that had always focused solely on quality and customer service. This focus often led to decisions that would increase waste by increasing packaging to improve the delivered quality of the products. Consequently the idea that packaging should be reduced was initially "counter culture" until Schiedel realised they could have a win-win solution by reducing the waste from packaging and improve the delivered quality of the product by redesigning the chimney system.

Lessons

The ability to not only detail the material that ends up as waste but to be able to put a cost on it has clarified the perception of the problem environmentally and economically. It was something of a revelation that the company was investing over €250,000 each year to produce waste which could not even be recycled.

Getting the Irish Agreement Board approval takes longer than expected, providing a barrier to achieving the full waste reduction savings more quickly. Schiedel is working with the board for final approval and are confident this approval will be granted. With hindsight, the company feels application for approval should have been made earlier in the project.

More Information

For more information on this project please contact:

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Kingscourt Rd., Carrickmacross,
Co. Monaghan, Ireland.

tel. 00 353 (0) 42 9661256

Cleaner Greener Production Programme
The Cleaner Greener Production Programme (CGPP) of the EPA was funded under the National Development Plan 2000 – 2006. The CGPP was launched in 2001 as a grant scheme to Irish organisations to implement cleaner greener practices while achieving significant cost savings.

Cleaner Greener Production is the application of integrated preventive environmental strategies to processes, products and services to increase overall efficiency and reduce risks to humans and the environment.

- Production processes: conserving raw materials and energy; eliminating toxic raw materials, and reducing the quantity and toxicity of all emissions and wastes
- Products: reducing negative impacts along the life cycle of a product, from raw materials extraction to its ultimate disposal.
- Services: incorporating environmental concerns into designing and delivering services.

The programme aims are focussed on avoiding and preventing adverse environmental impact rather than treating or cleaning up afterwards. This approach brings better economic and environmental efficiency.

Under Phase 2 of CGPP 22 organisations were funded from a variety of sectors (e.g. chemicals, food, metals, electronics, service). The total achievements from the projects for the participating organisations included annual reductions of 250,000 tonnes in input/output streams (water/waste water), 660 MWh energy reduction and €1.6m cost savings.

The programme will continue to be funded by the EPA in the NDP 2007-2013.

This case study report is one of the reports available from the companies that participated in the second phase of the Cleaner Greener Production Programme. A summary of all the projects and CD containing all the reports are also available.

More information on the programme is available from the EPA:

Ms. Lisa Sheils or Dr Brian Donlon,
Environmental Protection Agency,
Richview, Clonskeagh Rd., Dublin 14, Ireland.
www.epa.ie/researchandeducation/research/

Programme Managers...

The Clean Technology Centre (CTC) at Cork Institute of Technology was appointed to manage the programme. Established in 1991, the CTC is now nationally and internationally regarded as a centre of excellence in cleaner production, environmental management and eco-innovation across a range of industrial sectors.

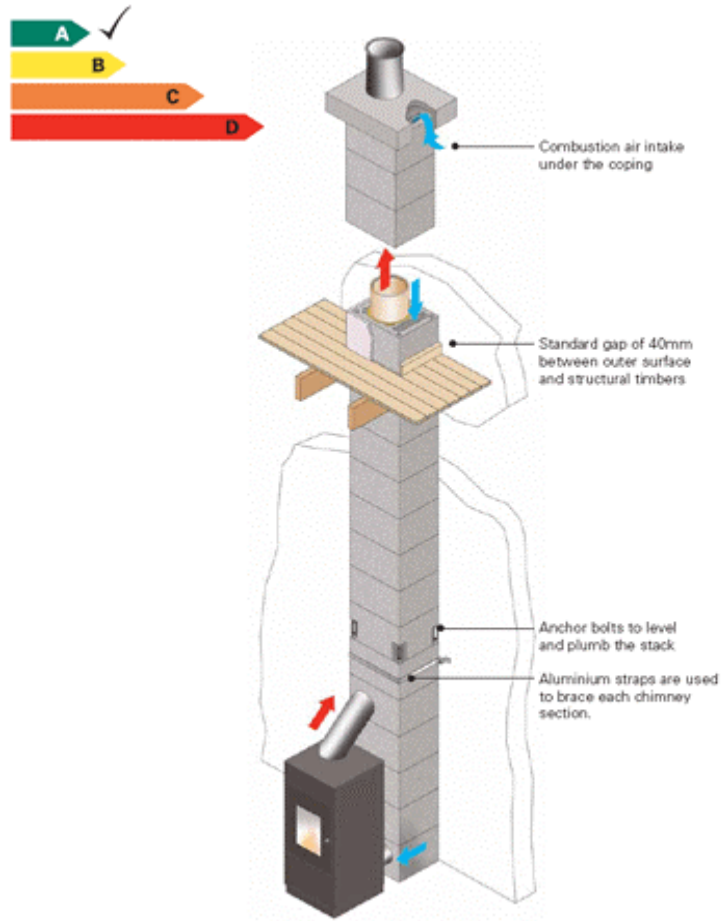


*The above savings are for when the existing system is 100% replaced by the new system. This is anticipated to take approximately 4 years. 12% of production in November 2006 was of the new system.

Benifits from CGPP Project

- Reduced packaging waste into Landfill
- Reduce cost of packaging materials
- Better Company image
- Improved Environmental awareness that has lead us to make our Chimney solutions Energy Efficient.
- Follow on from the CGPP we re-design our chimney System that has been displayed at the Plan Expo Show in Dublin .We got great reviews from the show and since have launched the product onto the Irish Market this year.. We have made our Chimney System Energy Efficient, Contribute significantly towards the renewable energy targets.
- You may ask the question how can a Chimney be energy efficient ?.

Other Benefits from CGPP Project



Energy Efficient Chimney Solution

The Schiedel Energy Efficient solutions deliver combustion air directly to the appliance. No air is taken from inside the house. The superior insulation in the chimney allows flue gases to escape freely to the atmosphere even at low temperatures. Suitable for stoves, inserts and pellet boilers

Lower carbon emissions from burning wood

Greater energy efficiency home with the enjoyment of a real fire

Contribute significantly towards the renewable energy targets

***Many thanks
for
your attention***