

## Our solution to your problem

Waste is not beneficial to the environment. Above all, it costs a lot of money and waste management is nobody's favourite time passing. Dry pulverisation changes this completely.

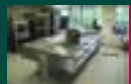
The system is suitable for collective kitchens of governmental buildings, hospitals, care homes, companies, army barracks, schools, Social Care Centres, psychiatric institutions

or institutions serving from 50 to 10,000 people or more.

In case you'd like to use our proposed system of dry pulverisation in your collective kitchen, we are prepared to assist you with its implementation.. Do not hesitate to contact us in case you have more questions. The MAGEC-team will answer you correctly.

## References of waste management systems since 1993:

- European Parliament, Building D3, Wiertzstraat, Brussels
- Council of the European Union, Justus Lipsius Building, Wetstraat, Brussels
- Ministry of Foreign Affairs, Egmont Building, Brussels
- Price Waterhouse Coopers, Woluwe Garden 12, Woluwe
- Dexia, Building Pacheco 44, Brussels
- European School, Mol
- Central Prison, Antwerp
- Mobistar, Brussels
- Eurostation Horta, Railway Station South, Brussels
- European Parliament, Building D5, Brussels
- Care Home 'Heilig Hart', Grimbergen
- Piva Hotel school, Antwerp
- Stella Maris Hotel school, Antwerp
- European Parliament, Building D4, Brussels
- Sint-Maria, Academic Hospital, Overpelt
- Care Home 'E. Remy', OCMW, Leuven
- European Parliament, Extension Building D4/D5, Brussels
- State Administrative Centre, Hasselt
- Council of the European Union, Building Lex2000, Wetstraat, Brussels
- Sint-Amandus, Psychiatric Centre, Beernem
- Onze-Lieve-Vrouwziekenhuis, Hospital, Aalst
- Central Prison, Leuven



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# Your waste is of gold value

The ecological and economical solution to the waste problem in collective kitchens



[www.magec.be](http://www.magec.be)

As a specialist in collective kitchens since 1945, we offer you the best solutions. From design and installation to after-sales service.



## Introduction

In this brochure, MAGEC presents her ecological and economical waste management system. We want to properly inform policy makers as well as directors, chairmen, engineers and chefs of the use of this project.

This unique installation requires large investments. MAGEC is prepared to make this system profitable for your collective kitchen, using all her know-how, experience and knowledge. If you still need more information after reading this brochure, do not hesitate to contact us.

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## Ecology and economy hand in hand

Since 1945, MAGEC is mainly active on the Belgian market. From the start, the collective kitchen department has seen a large expansion thanks to the import of high quality products. Despite many temptations, MAGEC has never deviated from this principle. MAGEC is an independent and free company supported by a vast internal know-how and experience. As specialist in collective kitchens, we offer tailor-made solutions. From design and installation to service after-sales. Everything is under our own management. Waste costs a lot of time and money. The system that I and my staff present you is ethical on both ecological and economical basis. At MAGEC, our penny has dropped already: in a modern profitable company, ecology and economy go hand in hand.

Investing in environmental management also means investing in company management. Nature, environment and climate are also corporate responsibilities. The solution we offer you takes the future in account: the ever more stringent legislation regarding surface water, the rise of dumping costs of unsorted waste and compulsory generation of green energy.

MAGEC will always look out for the best solution to your problem. Quality, durability, good relationships and a long-term vision are hereby central concepts. This continuous thread led us - after a lot of research and careful deliberation - to this compact, efficient and robust system. We are very proud to present it to you.

Boris Cossement  
Managing Director





## ■ A new challenge for the waste problem in your collective kitchen

■ Your collective kitchen produces many waste flows. The waste management system will allow you to process the following:

- Preparation waste: waste created during food preparation in the entire kitchen.
- Portioning waste: the excess food after portioning.
- Table waste: what is left on the plates.
- Non-reusable, expired or contaminated products.

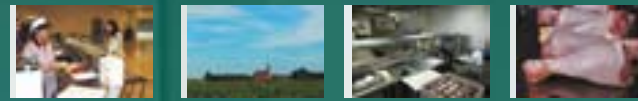
■ The amount in grams of waste varies according to the type of your institution. We speak of an average of 200 grams per meal per person on a daily basis:

- Hospitals: 500 grams
- Companies and government: 150 grams
- Care homes: 300 grams
- Psychiatric institutions and prisons: 600 grams
- Schools and army barracks: 180 grams



■ The system is therefore suited for the management of both animal and vegetable waste without a single exception. In principle, the system has not been designed to manage the following components: PMD (plastics - metals - drink cartons), paper and cardboard, Small Hazardous Waste, glass or household waste.

■ If a napkin happens to be processed once in a while, it will not block this robust system. You will sometimes have to deal with large quantities of unusual waste. For example: a mussel dinner. We then advise you to contact someone from MAGEC.



## MAGEC's solution is compact, flexible and simple

**1. Entry station:** A perfect waste management system starts with a comfortable entry station. This can be installed wherever you want. It complies with the highest functional, ergonomic and hygienic requirements.



**4. Pulveriser:** At the end of the transport route, the waste is pulverised without the addition of water or other products. This is why the mixture can easily degrade in the main reservoir.

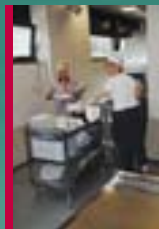
**2. Transport:** Through a 18/10 stainless steel pipe with a 150 mm diameter, the waste is immediately sucked away to the main reservoir. And not through an intermediary station.



**5. Homogeniser:** The milky fluid is constantly stirred in order to keep its homogeneity and avoid digestion. The mixture is in its state of decomposition and is therefore reduced with 25%.

**3. Route:** By using a powerful vacuum pump, the route has no limitations vertically or horizontally. The number of bends in the route is not important. Thanks to MAGEC's specific design, blockage is out of the question.

**6. The main reservoir:** MAGEC offers storage capacity between 1,500 and 18,000 litre tailored to your collective kitchen. They are manufactured out of 18/10 stainless steel and can be installed anywhere: both outside and inside, horizontally and vertically.



**7. Command post:** The entire system is very simple to control. You are automatically warned when the reservoir is nearly full.



**8. Pressurised air installation:** This installation allows for a transfer from the reservoir to the lorry in a matter of minutes. The transfer could not be simpler.



**9. Vacuum pump:** This installation ensures that your waste is immediately transported through the stainless steel pipes to the reservoir.



**10. Grease separator optional:** The heavy and light greases are sucked away from the grease separator to the main reservoir. The grease separator is an enormous extra cost saver.

**11. Connection to lorry:** The entirely closed system does not cause any smell pollution during the transfer to the biogas installation. There it is converted into green energy. This way, you will help creating a better environment.





## A perfect system with nothing but advantages

1. Dry pulverisation is a very environmentally friendly system. From the milky mixture, methane gas is extracted through digestion and converted into green energy. The return of 55% is 8 times higher than coal. The substance that remains after this process will serve as fertiliser.



2. MAGEC's system needs little manipulation. The waste is automatically sucked away. No lifting of heavy bags or unmanageable carts. There is no sound or smell pollution. The staff works in all comfort, ergonomically and hygienically. You will be able to offer your staff a more pleasant job fulfilment. Furthermore, it fits entirely within the HACCP legislation.



3. You save a lot of space. Because you do not need extra cooled storage space, no elevator, no corridor, no intermediary station or transfer bay needed. The waste management is done without carts, garbage bags or containers. The system is utterly flexible and is installed in both old and new buildings. The entry stations, pipes or main reservoir are installed wherever you want.

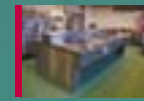


4. You save a lot on electricity. The system is very clean and hygienic. You do not need any extra cooling, airing, ventilation or extraction. It is a durable investment that is earned back after 4 to 7 years. When used correctly, the dry pulverisation does not need any maintenance. Blockages are out of the question. With MAGEC's system, your processing costs will be a lot lower than all other waste management systems.

**INNOVATION TECHNOLOGY:** MAGEC's waste management system is both nationally and internationally acclaimed after years of innovations on technological level. Apart from a number of renowned buildings, also cruise ships are being equipped with it. For example: The Queen Mary II. In November 2006, MAGEC received the "Innovation Award" for the most innovating product on the Hotel & Catering Fair in Flanders Expo, Ghent.

5. Dry pulverisation is the system of and for the future. Dumping charges remain on the rise, while the demand of green energy has been soaring already. The regulations in relation to surface waters become stricter. The system answers the demand of many institutions and companies to fit themselves an ecological image.





## Waste becomes energy

Your collective kitchen waste is transferred to a fermentation installation. Digestion is a biological process. Organic substance from vegetable or animal waste is hereby degraded by micro-organisms. The result is biogas and an odour-poor residue. The digestate is then used as fertiliser in the agricultural sector. The biogas is used as a source of energy in order to generate electricity: green energy: Several steps in the fermentation process:



- 1. Pre-processing
  - Reducing solid material: this is already done in the reservoir.
  - Mixing with liquid material until a homogeneous mixture is created: this is also done already in the reservoir.
  - Hygienisation: products of animal origin have to be pasteurised. This is done by using the heat generated by the fermentation process.



- 2. Fermentation: the homogeneous mixture is pumped into a sealed stirring tank. Here, biological processes take place whereby bacteria convert the organic matter into water, CO<sub>2</sub>, methane and a number of residual gases.



- 3. Converting into usable energy:
  - The mixture of gases is called biogas with 60% methane. This gas is used in order to run an internal combustion engine driving a power generator. This is how electricity is generated.
  - Coupled heat and power production: 41% of the methane energy content is converted into electricity. The rest is converted into heat.
  - The installation is built in such a way that the heat of the cooling system and the exhaust gases is recovered. This heat is used for the hygienisation process, the heating in buildings or other applications within the company.



- 4. The digestate: This is the fluid that remains after fermentation. The digestate is rich in nutrients and serves as an excellent stable, homogeneous fertiliser. The target market is the land cultivation industry.

