

I've Started So I'll Finnish

Tapiola's prestigious shopping centre project, in Finland, has put the management of its waste at the very heart of its development...

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Mention the name of Tapiola to anyone living in Finland and it's likely that any hint of recognition would derive from two unique and contrasting associations. A landmark of social development, Tapiola is culturally and historically one of the oldest and most famous parts of what was once widely known as "the Garden City of Espoo".¹ Built in the 1950s and 1960s, its architecture and landscaping – exhibiting an ideology of urban living that is in harmony with nature – has attracted tourists to the area ever since.

The original planners of Tapiola were convinced that no one professional group could solve the many problems of modern community planning. They considered that strictly directed teamwork at all levels was the key. As such, Tapiola is an enduring emblem of close teamwork in the fields of architecture, sociology, civil engineering, landscape gardening, domestic science, and welfare.²

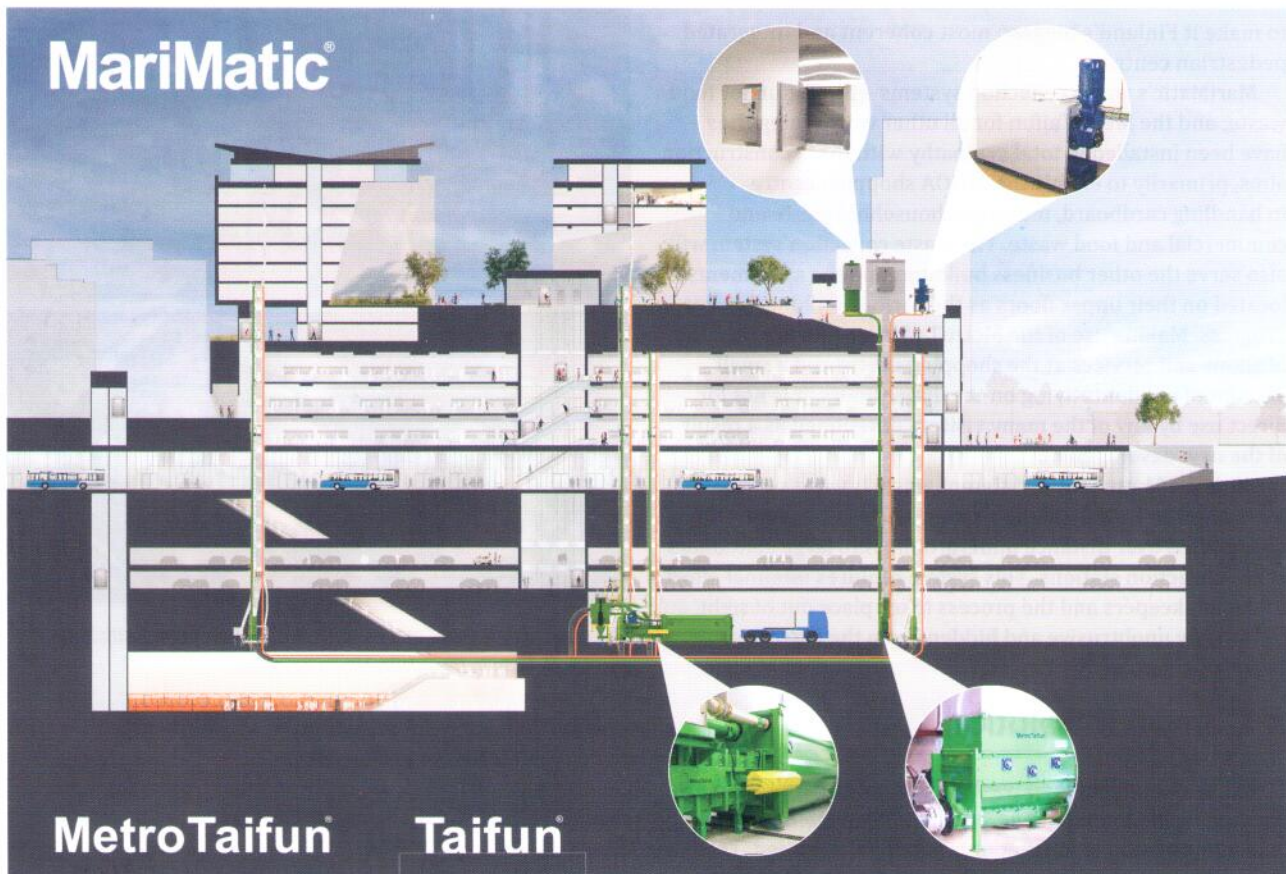
Tapiola is also the site where Finland's first shopping

centre opened in 1968. Since this 1960s heyday, Tapiola has grown rapidly and it is now recognised as the unofficial city centre of Espoo. However, as is often the case with successive waves of development, the very essence of the environment – that unique blend of nature and green values in an urban context, which made the Tapiola area so attractive a proposition initially – was effectively lost.

A New Twist On An Old Philosophy

DUE TO this slow decline, it has become a priority to regenerate the area and re-establish the original charm and quality of life, but in a new 21st century context. The recent decision to extend the Metroline from Helsinki to Espoo boosted the renewal of the Tapiola shopping district and planning has subsequently been conducted in keeping with the original philosophy.

The first phase of the AINO Shopping Centre in Tapiola



Left: the AINOA shopping centre in Tapiola, Finland.

Above: the architect's drawing of the centre, with the disposal and collection points of the MetroTaifun system highlighted

was opened in October 2013, comprising a total of 30 stores. Phase two opened on 16 March 2017, where the total number of stores increased to 50. Phase three is due to be completed in late 2019, when the centre will consist of more than 100 speciality shops and services. The total surface area of AINOA will increase with each respective phase: from about 10,000 square metres initially; to 30,000 square metres; then reaching a final total of 50,000 square metres.

This extensive new Tapiola development is viewed as a unique combination of a traditional city centre and the best experience that a modern shopping centre can provide. The past has not been forgotten, however, and there is an echo in the initial planning of this new community. No one group is predominant: this complex regeneration project seeks to balance the needs of a broad range of stakeholders, including the local authorities, parking representatives, the development's consulting company and representatives of financial and construction companies.

Every aspect of the project has been subject to rigorous analysis to ensure the right choices are made in constructing a development that continues to reflect the true spirit of Tapiola.

The challenge in the regeneration of the Tapiola shopping district is not just to emulate the old values, but to deliver a pleasant environment to visit – and in which to shop and do business – that is up to current standards and expectations. Key to this requirement is to write a new chapter in Tapiola's history of waste management, in particular, the awareness of the need for sustainability – and the associated health and

safety issues – which have developed dramatically in the decades beyond Tapiola's inception; going far beyond the attitudes and available technology of the 1960s.

MariMatic was selected as the supplier of the new waste management system after satisfying the rigorous quality criteria which were laid down by the stakeholders. Tapiolan Keskuspysäköinti Oy, chairman of the board, Vesa Eskoli, commented: "In the initial stages of this process we looked at a number of systems, but it soon became clear that MariMatic's system was the most consistent with our plans and specifications. It was able to handle the high waste demands and ensure that the vision for Tapiola was met."

A Sustainable Solution

MARIMATIC SUPPLIED the MetroTaifun – its automated solid waste collection system – as the solution for transporting waste in Tapiola. The priority requirement of the system is in dealing with the large amounts of waste that a shopping centre uniquely generates, while combating the high number of traffic movements traditionally required to take any waste away from site. The system was introduced in April 2016 to effectively solve these growing waste management challenges.

AINOA is more than a shopping centre. It provides a unique living environment; with innovative housing, parking provision (which in Finland is of the highest quality) and it is served by excellent public transport links, as well as a wide range of trade services. The ambition is

to make it Finland's biggest, most coherent and integrated pedestrian centre.

MariMatic's waste collection systems – the Taifun for food waste; and the MetroTaifun for all other waste categories – have been installed in total sympathy with these construction aims, primarily to enable the AINOA shopping centre in handling cardboard, municipal household waste and commercial and food waste. The waste collection system will also serve the other business buildings and the apartments located on their upper floors as the various building phases progress. Making use of the MetroTaifun system are the staff of shops and services at the shopping centre and a small amount of residents living on the upper floors. It is not for direct use by any of the many visitors envisioned as a result of the new development.

With the MetroTaifun, different waste fractions are easily sorted and collected – using a strong vacuum air flow – then transported over distance underground into large containers at the collection stations. This system requires minimal effort from shopkeepers and the process takes place out of sight, completely unobtrusive and hidden, from the customers of Tapiola's shopping district.

A Compact Solution

THE COLLECTION of food waste is combined with the solid waste collection system. The solid waste is sorted when it is entered into the wall-mounted hatches provided. The many restaurants on site have their food waste delivered into a hygienic tank. In both cases, the strong vacuum air flow draws the different waste fractions through a closed pipe network to the waste station that is located 25 metres underground in the Tapiola Park 2 maintenance hall, where the waste ends up tightly compacted.

Vesa Eskoli explained: "Less air volume means smaller equipment and that in turn shows directly in the lower investment costs for the MetroTaifun system. This applies to both the waste station equipment and the pipe network, where the composite piping material enables fast and economical installation, which requires 50 percent less installation time than conventional pipe installations."

The automated waste collection ensures that the traditional sight of waste bins shuttling back and forth is avoided in AINOA's facilities. This is also true for the prevalence of garbage truck traffic in Tapiola City Centre, where less traffic equals less emissions into the shopping district environment.

Vesa Eskoli emphasises: "The MetroTaifun's energy efficiency is outstanding in comparison to other waste collection systems. The innovations in the system provide extensive benefits, encompassing investment, operating costs and in savings on energy consumption. In addition, the system saves on valuable space, reducing blower sizes and blow-out air volume to a third of competitor's specifications."

The MetroTaifun system has enabled the handling of large amounts of waste more easily and in a more hygienic manner. The transport of waste has been taken away from the traditional routes using elevators and corridors, with obvious environmental and safety benefits. The obstructive traditional waste bins and all the logistical problems they cause are avoided in AINOA's facilities. There are less service



The cardboard crusher and the typical cardboard composition that the system collects in the AINOA shopping centre

staff needed as a result, and those that are employed are free to carry out far more productive tasks.

An Enhanced Collection

THE PROCESS of waste management has been considerably enhanced. Selective collection delivers a much more efficient, safer and cost-effective solution, in particular due to the centralised collection of waste. The waste fractions are selected into groupings that contribute the largest amounts of waste in a typical shopping centre. These are cardboard, solid commercial waste, wet food waste and solid household waste. Cardboard is inevitably the biggest problem in any shopping centre – derived mostly from the packaging of delivered stock. Huge volumes are produced and MariMatic's waste collection systems deliver efficiency in dealing with this problem as an absolute priority.

Vesa Eskoli concludes: "The MetroTaifun system has more than met our expectations for waste management. It has been in use in the AINOA centre in Tapiola for nearly a year, providing a highly efficient and hygienic outcome. The fact that most visitors to the centre are completely unaware of its presence is testimony to the system's combined strengths. We are sure that the Taifun will cope with any of the demands that the next phase of development might place upon it. Visitors, customers, staff and businesses will be enjoying the benefits – both now and in the future – as they contribute to the environmental enhancement of Tapiola and help us in restoring the reputation of this special area for the Finnish people". ■

References

1. www.espoo.fi/en-US/City_of_Espoo/Decisionmaking/The_Espoo_Story
2. Tuomi, T., & Paatero, K. (2003). Tapiola: Life and architecture. Espoo: Housing Foundation in cooperation with the City of Espoo