

Step by step to an optimal result

White paper Dishwashing area planning



What hotel and food service managers should know about dishwashing area planning

Expert planning – Ergonomics – Efficiency – Ventilation – Food waste disposal

Contents

On a quest Can you really plan the perfect dishwashing area?	3
Bear it in mind Important factors which influence dishwashing area planning	4
Step by step An expert is essential	5
Ergonomics for success Higher efficiency, less downtime	7
Dishwashing area ventilation A better indoor climate is good for everybody	8
Smart food waste disposal How kitchen waste disposal and recycling work in the modern world	9
Summary Why the industry pros insist on experts for their dishwashing area planning	10
About Meiko Want to know more?	11

On a quest: can you really plan the perfect dishwashing area?

Poor planning is the rule not the exception

Errors in commercial kitchen planning usually only become apparent with hindsight. Common problems include overlapping routes on different tasks, a lack of work surfaces, poor ergonomics, insufficient ventilation in the kitchen space and, especially, unsuitable warewashing technology. It's clear to see: most problems have little to do with the cooker!

The dishwashing area is a pinch point

The dishwashing process plays a secondary role as a part of the overall kitchen. It simply has to work.

The following are important considerations:

- Staffing
- Machines
- Use of dishes
- Space requirements
- Utility costs
- Hygiene standards
- The right water treatment and choice of chemicals (detergent and rinse aid)
- Legal requirements on drainage, ventilation and removal of grease from waste water

So many factors to consider make it a difficult decision

The sheer number of factors which influence this decision (see also p. 4) makes it tough for those in the trade to work out what the best choice is: restaurant, bar or café owners; head chefs; or hotel, communal catering or food service chain managers. That is why we recommend engaging an experienced kitchen planner and taking it step by step. The following pages will give you an idea of what that can look like in detail and what the benefits are.

Our white paper on dishwashing area planning covers the following:

- Important factors which influence dishwashing area planning
- An expert is essential
- How ergonomics helps with warewashing
- Dishwashing area ventilation: a better indoor climate results in increased efficiency
- Clean and hygienic food waste disposal

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Important factors which influence dishwashing area planning

Experienced specialists first determine what the space requirements are: where do deliveries arrive and where are they stored? Meat, fish and vegetables have to be accommodated differently from drinks and dry food. How much space do the cooking and dishwashing areas take up? And, of course, the storage space has to be planned in right from the start, keeping it separate from the kitchen itself, the staff areas, the office and, crucially, the dishwashing area. In order to avoid long and overlapping routes on tasks, work areas need to be organised so as to facilitate efficient work

processes.

Separating areas into 'clean' and 'unclean'

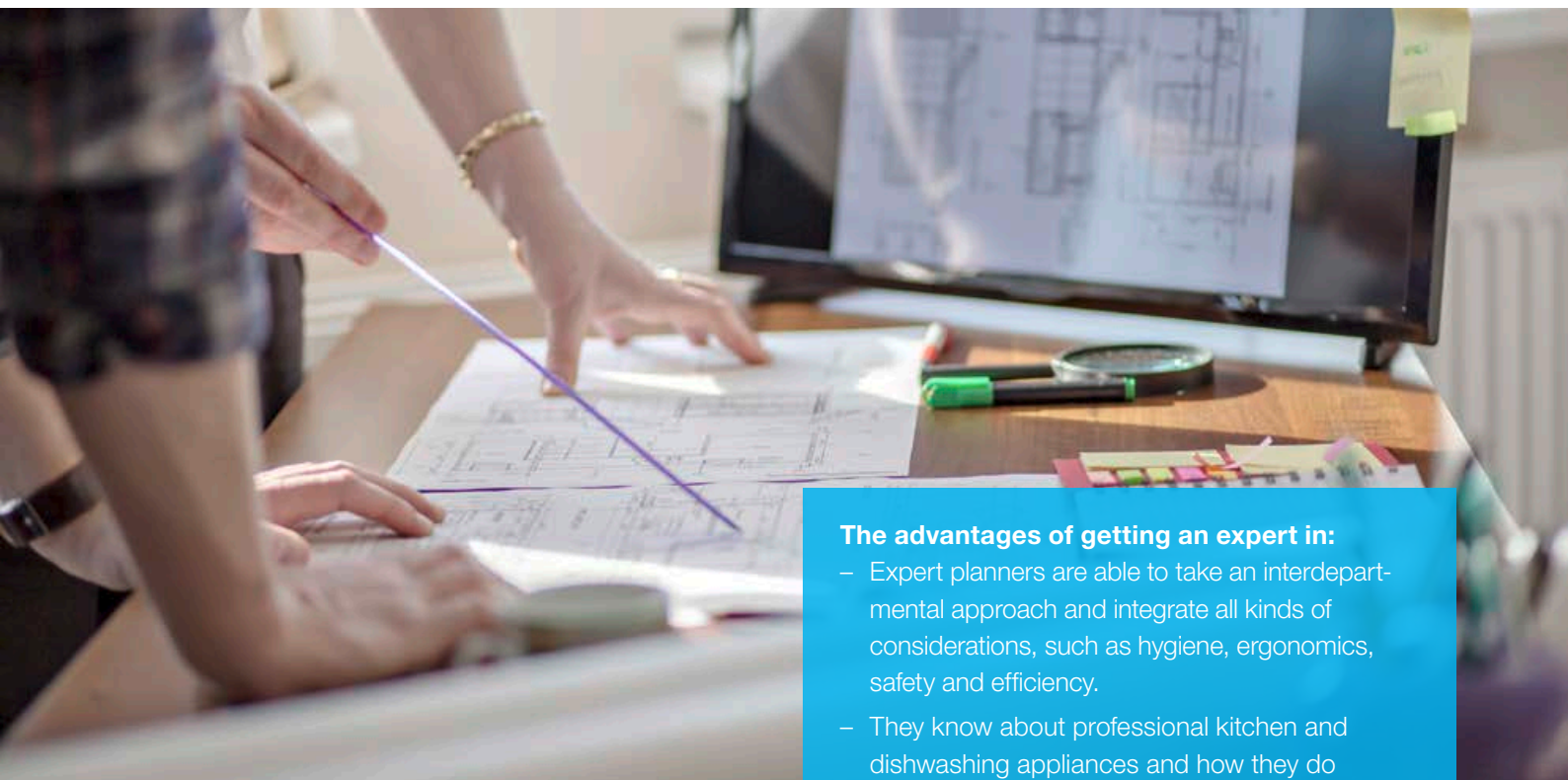
Areas have to be strictly separated into 'clean' and 'unclean' to maintain hygiene. It is equally important that, for example, kitchen staff quickly dispatch food to the serving staff and dirty dishes return just as quickly to the dishwashing area.

You can answer all kinds of questions using our checklist below.

Checklist of important factors which impact the decision:

- **Size of establishment** (number of covers)
- **Guest turnover in establishment** (covers per hour)
- **Type of food service** (self service, table service, buffet, etc.)
- **Occupancy rate** in general operation and at peak times
- **Space** available
- **Dishware and tableware requirements**
 - For cooking -> black dishes
 - Breakfast, lunch, coffee, dinner -> high degree of variation
 - Beer garden -> high percentage of glassware
 - Are fine porcelain and glasses needed?
- **Dish return**
 - Self service
 - > Tray trolley
 - > Conveyor belt
 - > Staff to clear tables
 - Table service
 - > Return with option for buffer
 - Buffet
 - > Staff to clear tables (pre-sort and dispose of food waste)
 - Handling food and drink waste
 - Chaotic or orderly (pre-sorted) return
- **Warewashing**
 - Machine layout
 - Water quality
 - Drying
- **Handling washware**
 - post-wash
 - Quality control
 - Temporary stacking, storage, immediate reuse
- **Items on a cycle**
 - Racks
 - Cutlery quiver
- **Workflows**
 - Routes travelled by dishes
 - Routes travelled by staff
 - Waste management
 - Items on a cycle
- **Hygiene**
 - Guidelines and regulations
 - Staff hygiene
 - Machine (maintenance and care)
 - Washware quality control
 - Handling food and other waste
 - Ventilation





The advantages of getting an expert in:

- Expert planners are able to take an interdepartmental approach and integrate all kinds of considerations, such as hygiene, ergonomics, safety and efficiency.
- They know about professional kitchen and dishwashing appliances and how they do on things like performance, quality and maintenance costs
- They know which legal standards they have to stick to

Step by step: an expert is essential

Whether you are planning a brand new kitchen/dishwashing area or renovating an existing one, the most important decision you make is probably hiring a specialist to handle the design. Experts design and plan for a specific industry.

Simple solutions to complex problems

In order to put together the best possible design for you, your expert planner will first work with you to identify what your vision is for your new kitchen/dishwashing area and what you want from it. It is important that you communicate your expectations clearly and unambiguously and that you provide your planner with all of the key information (see checklist on page 4). At this stage, you should also consider the financial aspects of your construction or renovation project and how your business is expected to develop in the future.

Your expert planner will ensure that the design enables you to run a cost-efficient business and meets all legal require-

ments for hygiene, ergonomics and safety. High rents in the centres of large cities can be a particular challenge. In these cases, the size of the dishwashing area must be kept to a minimum so that as much space as possible can be dedicated to the public area in the restaurant or bar.

Up-to-date warewashing technology is a must

This is also the time to discuss purchasing high-tech kitchen and warewashing technology. Outdated warewashing technology is always causing problems in food service. When dishes need to be more than cleaned, they need to be cleaned reliably, quickly and cheaply, then you should never

choose a cheap machine – they often cannot meet the standard when a large quantity of dishes is to be churned out quickly and sparklingly, hygienically clean. In particular if that needs to happen constantly over several years.

Keep an eye on ROI and TCO

If you want to avoid the risk of breakdowns and their expensive consequences, you should always choose a well reputed manufacturer. In addition, professional dishwashing machines consume less energy and, when you do need

them, the customer service team is available around the clock, even at weekends. The bottom line is that in terms of ROI (return on investment) and TCO (total cost of ownership), this strategy will always pay off for you.



‘When planning a commercial kitchen, you have to master process and logistics design, too, because you are dealing with a production company which manufactures food by hand.’

Professor Peter Schwarz, physicist at Albstadt-Sigmaringen University

Ergonomics for success: higher efficiency, less downtime

In 2016, around
25 million work days
were lost to
'back pain'
alone

Kitchen planning 101

Peter Schwarz, a physicist at Albstadt-Sigmaringen University highlights how smart kitchen planning can lead to reduced staff absences in food service, 'Workplaces with good ergonomic design lead to greater job satisfaction and increase levels of acceptance for people. That, in turn, results in fewer errors and less absenteeism, which translates into greater efficiency.'

Ergonomics is the key to increased success

Employees in the food service industry have to work at full capacity every day. They tend to be on their feet more than in many other professions, often working ten-hour shifts and doing physically demanding jobs. Anyone who works

in a restaurant or commercial kitchen knows how important it is to have ergonomic working conditions and workflows that make the best use of the time and space available. It is equally important to arrange the dishwashing machines or glasswashers, work surfaces and other equipment (see below) in a way that produces the highest quality and most cost-effective results. On top of that, high-tech dishwashing machines feature rack detection and automatic hood opening technology – features that make life easier for people.

At the same time, the people working there should not be put under too much physical strain, and they certainly should not come to any harm, even if they do the same job over a period of many years. Always think of the people when planning your commercial kitchen.

Ergonomic kitchen design increases efficiency and reduces staff absences



Go easy on their backs

Any integrated appliances which are used regularly should be placed at optimum hand height

Height matters

For a chef measuring 1.74 m, work surfaces should be a height of 98 cm (for someone 1.55 m tall, approx. 85 cm)

Within quick reach

Anything that is used regularly should have a proper place within easy reach

Short distances

Always consider workflows: any journey saved ends up saving time and money

Great atmosphere

The indoor climate has a significant impact on kitchen employees' performance

Keeping employees in mind

Workplaces with good ergonomic design create better job satisfaction and improve efficiency

Dishwashing area ventilation: a better indoor climate is good for everybody

It is not only optimised processes and choice of machines which are significant for the ergonomics of a commercial or restaurant kitchen. Factors such as temperature and air humidity – i.e. the indoor climate – as well as noise pollution also have an impact on workplace ergonomics: 'If the temperature in the kitchen increases to 28 °C, productivity drops to 70 %. At 33 °C, it drops even further, to 50 %,' calculates Professor Peter Schwarz of Albstadt-Sigmaringen University. On top of that, the heat masks humidity (latent heat), meaning that the water vapour condenses on cold spots on the wall, in the corners of the room or on the window and it can cause mould if you are unlucky.

An appropriate ventilation system is a legal requirement

You will therefore need to factor in temperature and humidity right from the planning stages. It is essential that kitchens/dishwashing areas are equipped with a ventilation system suited to their size **which both removes unpleasant odours and ensures a balanced indoor climate.** A poorly positioned ventilation system can lead to poor conditions in the kitchen so this aspect should always be handled by a specialist (expert planner).

Heat recovery reduces volume of steam

A further option to reduce the temperature and humidity in the kitchen/dishwashing area is to use high-tech dishwashing machines with integrated heat recovery systems. No visible steam escapes when the machine is opened and no additional heat or moisture enters the room.



70 %

'If the temperature in the kitchen increases to 28 °C, productivity drops to 70 %. At 33 °C, it drops even further, to 50 %', calculates ergonomics expert Professor Peter Schwarz.



Smart food waste disposal: how kitchen waste disposal and recycling work in the modern world

Everyone in the food business has to learn how to properly dispose of food waste. And there is huge potential in 'wet waste': let's assume that a restaurant produces an average of 500 meals a day. The resulting wet waste is enough to provide electricity to four two-person households and heating to one two-person household for a whole day. **'That is why expert kitchen planners and specialist traders are spending more time focusing on wet waste,'** says Patrick Hoffmann, CEO of Meiko Green Waste Solutions.

Food waste treatment systems have so much to offer

A high-tech food waste treatment system will improve hygiene standards AND save you the cost of cooling a storage room. It will save space, too, making room for more important things. And we know that every inch is worth money in food service. Not to mention that your workflows for food waste management will improve without all of those waste bins in the way: **simply tip the**

food waste into the feeding station and press the button. That's it!

Better hygiene with less effort

'Everyone in business in the food service sector will benefit from improved hygiene, reduced work levels and lower resource consumption, be those benefits financial or improved conditions for employees. That is before we get onto the social benefits of being environmentally friendly in food waste disposal and recycling,' Patrick Hoffman is enthusiastic.

Specialist companies like **Meiko Green Waste Solutions** are able to offer tailored solutions for commercial kitchens, canteens, hotels, food service and communal catering.

Find out more here:

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Poorly planned spaces account for unnecessary costs amounting to millions each year!

Summary: why the industry pros insist on experts for their dishwashing area planning

Clueless on planning

Start-ups, restaurant managers, head chefs and hotel managers all have a healthy respect for kitchen and dishwashing area planning. Ask them why, and they all give the same answer: barely anyone has any experience in this area.

Yes at some point, all **restaurant and hotel managers** have to deal with it, whether they want to design a completely new kitchen or carry out improvements to the existing one.

Always ask the following questions:

- What is the best approach for me to take to the planning?
- What factors do I need to consider, which will impact the planning?
- How can I best use the existing space to facilitate efficient workflows?
- What is the role of workplace ergonomics here?
- Who is going to partner with me in this project?

The key is picking the right people

The critical time for avoiding planning errors in your commercial kitchen is before you start – right at the planning stage.

Don't just follow your gut, follow some expert advice.

Expert planners pay attention to even the smallest detail

Professional kitchen planners analyse the size of the room, the separation of clean and unclean areas, ensure that hygiene standards are met, test workflows for efficiency (no overlapping routes, etc.), recommend the right warewashing technology for the expected volume of dishes, ensure sufficient ventilation and factor in food waste disposal and workplace ergonomics. It sounds like a lot of work but with the right people on board, it is completely manageable.

Up your quality, your efficiency and your profitability

One thing is certain: the effort will be worthwhile in the end. Happy and motivated employees make for happy customers – you'll see an improvement in quality, efficiency and profitability in your food service company. A win-win for everyone involved.

Want to know more?

You can find more pro tips on dishwashing area planning in our **online magazine**:

www.meiko-uk.co.uk/news-press/magazine/

Or call us on

Telephone: +44 1753 215120

Our experts will be happy to answer any questions you may have.



Who is MEIKO?

- MEIKO Maschinenbau GmbH & Co. KG Englerstr. 3, 77652 Offenburg, Germany
- Warewashing technology for commercial enterprises ranging from the smallest of glasswashers to the largest dishwashing machines on the planet; wet waste treatment systems for food service and communal catering; cleaning and disinfection technology for hospitals and residential homes; cleaners for BA masks/PPE in the safety industry
- Employees: 1,200 in Offenburg, 2,500 in the Group
- Owners: The Oskar and Rosel Meier Foundation; CEO: Dr Stefan Scheringer
- Founded in 1927 in Offenburg by Oskar Meier and Franz Konrad