

As professional specialists we believe in offering warewashing solutions rather than supplying a collection of equipment and our design is based on future proofing the dish wash operation, including taking tomorrow's environmental issues into account.

Main criteria for a good wash up layout must improve work flow, give a better separation of soiled and clean and as a result improve operator environment and ergonomics as well as improve hygiene.

### **WorkSafe.**

Worker safety is perhaps the most important criteria when designing an operation that requires regular manual handling. Our layout proposals optimise technology to achieve a safer work environment. Included in work safe designs are up to date ergonomics, which not only make an operation safer, but also improve staff moral and work enjoyment.

The optional use of automation is a typical unique example.

### **Throughput.**

Although theoretical throughput is always specified, actual throughput is operator dependent. Throughput should be based on a realistic and (to some degree) flexible performance requirement. Our designs allow for "operator autonomy" over specified tasks. That is one of the reasons why we do not have a single operator loading a conveyor belt type machine.

### **Environment.**

Sustainable environmental management is vital.

Minimizing the quantity of water used and maximizing its efficient use is a special feature of our equipment. Water can be used in various stages: heat recovery, ductless venting, final rinse, pre-rinse, wash water make up and finally after use in the pre-wash dumped. Final rinse water consumption is constantly monitored.

The heavy duty pre-wash eliminates the need for fresh water hose down sprays. Recirculated water is used for pre-scraping the dishware. It reduces manual handling as bowls etc are also rinsed from below which cannot happen with a spray hose.

A heat pump recovery system minimises energy use.

The use of dedicated machines such as tray washers reduce water and energy consumption.

### **Cost of Ownership.**

Studies have shown that traditional commercial dishwashing operations can use up to 45% of the power consumption in a commercial kitchen, about 80% of the total water consumption and 80% of chemical consumption. Effective use is not only environmentally responsible, it also reduces costs.

The cost of ownership of a dishwashing operation is approx. 5% capital cost, 15% running costs and 80% labour costs. It makes sense that saving 25% on capital costs is not as cost effective as saving 25% on labour costs.

The ultimate goal of our proposals is to lower the cost of ownership without compromise. This will last the life time of the investment

Costs can be expressed in financial values or social values, the latter playing an increasingly larger role in decision making. In many cases the two go hand in hand. Reducing costs is carried out by making savings. However there are hard and soft savings.

Hard savings are quite easy to calculate. If a machine costs \$100,000 and it saves one EFT at \$50,000 per year, the outcome is easy. An example of hard savings on both financial and social cost values would be if injuries are costing \$50,000 a year then a \$100,000 expenditure to avoid them is worth the investment payback.

Soft savings could be investing in additional features that improve work environment which in turn makes workers happy, which results in less absenteeism or higher productivity.

Soft savings are investing in environmentally friendly features that will minimise pollution or the reliance on non-renewable energy sources.

Soft savings are future proofing the system to avoid costly changes in time to come.

### **Design.**

The systems are designed to fit into the space allocated and maximise free floor space for clean ware removal, without compromising operator work environment and system capacity. We always design in collaboration with the user groups to ensure the proposed design meets all requirements.

Some factors to consider when designing a dishroom:

- Longer tray conveyor from dining area allows for more trays to be loaded in busy periods, resulting in less queuing of customers.
- Processing trays takes up a lot of machine time and energy – a dedicated traywasher is more cost effective and frees up machine space.
- Twin machines each running at 70% to 80% capacity gives good redundancy rather than one large unit running at 100% capacity.
- Double sided stripping station not only gives more space but makes for pleasant work environment
- No single person loading a machine. With a conveyor belt machine the loading speed is dictated by one person. Allow operators to have autonomous control over loading speed.
- Use a layout that opens the room space.
- Longer clean dish exit allows for better drying and is more ergonomic for unloading operator
- Can the system operate with one person in emergencies or very quiet periods
- Identical machines means that in case of breakdown there is a redundancy and system will keep working
- Machines supplied with heat pumps for full heat recovery and room conditioning save money in the long term
- Clear separation between soiled and clean areas (HACCP)