

Packaged pump houses are an engineered-to-order solution, which are constructed, pre-wired and tested to individual site requirements prior to despatch. They can be built fully compliant to any known fire standard and can cater for virtually any quantity of pumps required. They are designed and fitted with a choice of components from bona fide suppliers to ensure a robust yet cost effective solution.



*Fig 1 - An example of the interior of a typical packaged pump house*

### **When would I need an packaged pump house?**

A packaged pump house can be ideal for any installation where the pumps need to be installed externally from the basement/plant room and are mainly used as an alternative to traditional brick built pump houses. They can come in various configurations to meet interconnecting pipework and access locations. They can also be ideal on sites where there are restricted labour/access requirements and limitations.

Packaged pump houses can be either off-loaded via a Hiab vehicle or a crane-lift, this is dependent upon the overall size and weight of the pump house. The base and internal frame is designed to support the weight of the equipment, meaning no plinth is required for the pump house to be positioned on. The unit can also be relocated as necessary in event of site changes or adaptations without the need to reconstruct the unit.

#### **Typical applications**

- Education i.e. schools, colleges and universities
- Hospitals
- Commercial buildings
- Retail outlets
- Warehousing and distribution centres
- MOD
- General industry



## A standard packaged pump house could consist of the following:

- Electric pump-set (including pump-end and electric motor)
- Electric pump controller (star-delta starter with 4 volt-free contacts)
- Diesel pump-set (including pump-end, diesel engine, fuel tank, batteries and controller within a single skid)
- Jockey pump (Grundfos CR pump achieves a minimum of 1 bar over the closed valve pressure of the proposed duty pump)
- Jockey pump starter (direct on-line starter)
- All necessary control switches and controls (including wet alarm valve sets, initiation board, fireman's breaching inlet etc.)
- Electrical services (including pump room heater, fan extraction, audible alarm and motorised louvres)
- Mains distribution board (for the connection of electrical services excluding the main fire pumps, including the jockey pump, heater, fan extraction, motorised louvres, audible alarm etc. Two free spurs provide for the tank heater and trace lagging).
- Common suction (or individual in event of 'Life Safety' systems) and discharge manifolds with a test line
- Extruded 2mm thick aluminium frame with 50mm thick panels (double-skinned, insulated construction, with BSC colorcoat-plastisol coated steel inner and outer) External colour 'Goose Wing Grey'.

## Other ancilliary equipment available as follows:

- Alternate electric pump-set (including pump-end and electric motor)
- Alternate diesel pump-sets (including pump-end, diesel engine, fuel tank, batteries and controller within a single skid)
- Remote alarm panel (for monitoring of signals remote from the pump house)
- Automatic supply change-over panels (used on twin electric pump installations to alternate two incoming supplies to each pump)
- Monitored isolating valves
- Glass reinforced plastic (as an external material alternative)

Fig. 2



Fig. 3



Fig. 4





Fig. 6



Fig. 7



Fig. 5

*Fig. 2 and 3 - Pump house units are designed, built and tested at our Sunderland Manufacturing plant.*

*Fig. 4 and 5 - When complete, units are carefully loaded for transportation.*

*Fig. 6 and 7 - Access to facilitate checking on the units operation is easy.*

## How to select a packaged pump house?

As packaged pump houses are engineered-to-order, it is recommended you speak to Grundfos at the earliest possible stage. To enable us to best assist with the initial selection of equipment, we would need to know the following :-

- The necessary fire standard compliance (i.e. LPCB / FM)
- The pumping equipment/duty demand required (ie diesel/electric and flow/pressure).
- Suction/discharge pipework sizes (these are stated within the relevant standard)
- Site drawings (to determine inlet/outlet connections and access orientation)
- Wet alarm valve sets (if required, and how many)
- Isolation valves (if it needs to be lockable or monitored)
- Any special requirement/specifications to follow (i.e. life safety or suction lift applications)

Similar to traditional brick built pump houses, each main pump will require a dedicated power supply, and a supply for the other electrical equipment within the pump house.

## To what compliance standards can this equipment be built to?

- LPCB – Loss Prevention Certification Board
- BSEN12845 – Fixed firefighting systems. Automatic firefighting systems. Design, installation and maintenance
- BS9990 – Code of practice for non-automatic fire-fighting systems in buildings
- BS5306:Part 1 – Code of practice for fire extinguishing installations and equipment on premises for hydrant systems, hose reels and foam inlets.
- BS 9251 2005 – Sprinkler systems for residential and domestic occupancies
- BS DD8458-1 2010 – Fixed fire protection systems, residential and domestic watermist systems
- BS DD8489-1 2011 – Fixed fire protection systems, industrial and commercial watermist systems
- NFPA – National Fire Protection Association and Annexes
- NFPA20 – Standard for the installation of stationary pumps for fire protection
- FM – Factory Mutual datasheets
- UL – Underwriting Laboratories



## Benefits

- Pump Houses are engineered, built and electrically/mechanically tested in Grundfos Sunderland, ensuring the product has passed all quality checks and achieved duty parameters preventing incorrectly sized equipment reaching site.
- Units arrive to site ready to be connected externally mechanically and electrically and will start immediately, reducing labour and time on site costs.
- Insulated pump house material manages the temperature, drastically reducing heat demands during colder months saving on electricity costs.
- Pump house enclosures are independently fire tested and approved to BS476 Part 6 and 7, by Warrington Fire with 60 minute fire rating as standard ensuring the equipment is fully compliant with requirements.
- 30 year guarantee against corrosion and UV degradation in any normal outside environment on pump house enclosure ensuring the longevity of the pump house.
- Units are tailored to suit site layout and orientation ensuring designs fit with the building pipework demands thus preventing re-design costs and reducing external connectivity component costs.
- In the event of site amendments, the unit can be moved and installed in other locations either on the same site or other sites giving flexibility for the future without reconstruction costs.
- Selection of pump combinations and configurations (i.e. life safety/property protection/single/twin pumps) makes units suitable for any installation.
- Built in full accordance with standards and/or in compliance with applicable specifications ensuring units meets all requirements without a snag list.
- Emergency back-up lighting in event of a mains failure ensures the safety of anyone in the pump house.

## New B&Q store chooses Grundfos packaged fire suppression system

B&Q is the largest DIY and garden retailer in the UK with 350+ stores within its portfolio. They are continuing to expand and recently opened a new store in Burgess Hill, Sussex.

With a stock profile that encompasses around 40,000 lines - many of which are flammable - a state of the art fire suppression system is a high priority for B&Q. This is why fire specialists Grundfos Pumps worked in conjunction with Alpine Fire engineers to develop a bespoke solution. They subsequently proposed a Grundfos Packaged Pump House solution that would meet the most stringent criteria.

Grundfos introduced these systems in 2009 and each pre-packaged pump house is delivered to site complete with the pumps – in this instance 2 x LPCB high hazard diesel pumps - and with the necessary pipework, valves, wiring, heating, lighting and drainage, all packaged within in an insulated steel enclosure and mounted on a structural steel baseplate.

Packaged fire units from Grundfos offer several key benefits: reduced labour requirements/costs on site, reduced ground-works, all are fully assembled and pre-tested in a quality controlled environment at the Grundfos factory and Fire Excellence Centre in Sunderland, prior to delivery.



Fully compliant with the BS EN12845 installation standard and delivered crane-offloaded to site; this solution is one neat package that will continue to deliver for many years to come.