



## **20 Questions to Ask Before You Purchase a Piece of Equipment**

Successful asset management requires having a budget and plan in place for the future replacement of critical building equipment. But should that plan be for the exact same replacement item, or is there a better solution, a better supplier, or does it even need replaced? To this point we want to touch upon the 20 question to be asked when ordering equipment and we draw from Mr. Michael Blanchard, P.E., CRE in the article, “20 critical questions you should ask to optimize the reliability and maintainability of new equipment” in Plant Services digital magazine.

It should be noted that the type of building really doesn’t matter on several points in the purchasing process as much of the criteria noted herein being applicable for a church, school, office building, etc.

Once you take these points into consideration then additional criteria may be required based on the asset manager’s purchase order policy and procedures.

To start, a generic “purchase order” will usually include the following:

A company standardized form with letterhead, name, address, and possibly the company or institution’s logo in the background

Near the top of the purchase order should include basic reference and shipping information:

- Purchase order number from asset manager
- Ship To:
- Special instructions
- Delivery-By due date

Also near the top of the form should include:

- Contact person name and contact information, e.g., telephone number, extension, etc.
- Reference to Terms and Conditions

Below this top reference information should be an



equipment schedule such as:

- Item
- Quantity
- Description
- Unit Price
- Cost

With the above schedule filled in listing one or more pieces of equipment the “Cost” should be summed up directly below the “Cost” box as follows:

- Total
- Shipping & Handling
- Tax
- Final Total

At the bottom of the purchase order should be a place for the individual issuing this purchase order to complete the following:

- Signature
- Title
- Date

But what about the questions to be asked leading up to an authorization to purchase a needed piece of equipment? Mr. Blanchard highlights 20 really good questions to be asked to optimize the reliability and maintainability of new equipment, chronic reliability problems, high cost, and short useful life. (Safety and environmental concerns are of the utmost importance and need to be addressed by experts in those fields.).

The 20-questions to be asked are:

1. Have the equipment specifications been provided to the vendor yet? Has the purchaser received confirmation from the vendor the equipment meets the purchaser's specification?
2. What is the criticality of the new asset? Rank the criticality of the new asset with respect to the rest of the plant and the magnitude of the consequences resulting from an equipment failure.
3. What are the functional requirements of the new equipment? Define the active and passive functions, including performance standards, which the equipment must demonstrate throughout its lifecycle.
4. What are the reliability requirements? Document the required reliability that the equipment or system must be designed to achieve.
5. What is the life expectancy of the new equipment? Recognize that life expectancy is not only a critical design parameter, but it also impacts the total-cost-of-ownership calculations to achieve the project needs and secure return on investment.
6. What are likely failure modes for the asset type? Review equipment history in the manual or computerized maintenance management system (CMMS) for similar equipment in this facility.
7. Is the asset designed with maintainability in mind?
8. Has the purchaser aimed to adhere to these five principles:
  - Standardized components
  - Interchangeable parts
  - Modular design
  - Accessibility
  - Software monitoring controls
9. What is the experience and reputation of the equipment manufacturer/supplier?
10. Is the application of this technology well understood?
11. What are the factory acceptance testing (FAT) requirements?
12. What are the commissioning requirements?
13. How will the equipment be operated?
14. How will the asset be maintained?
15. What are the training requirements?
16. What information is needed to set up the new equipment in your manual or CMMS?
17. Will the asset use smart PdM devices?
18. What are the spare parts requirements?
19. What are the plans for continuous improvement?
20. Is there a plan for decommissioning and disposal?

The questions above can become transformed into a very good checklist for the person responsible for purchasing a new piece of equipment because the evaluation begins early on in the process and not at the point when someone picks out the new piece of equipment from a catalog.

For more information on the 20-questions to ask, refer to Mr. Michael Blanchard's article published on web site, <https://www.plantservices.com/articles/2020/20-critical-questions-you-should-ask-to-optimize-the-reliability-and-maintainability-of-new-equipment/>

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