Focus on the laboratory plan &design and construction process

Before the establishment of a modern laboratory, it need The companies with professional design to participate in order to achieve the integration of functional and aesthetics for the laboratory.

First, the selection of venues for laboratory built:

• Buildings under construction

• Construction completed ,but the building which nobody stay in yet

• Old buildings Used many years which the multi-location and the patterns both meet the establishment of the conditions

The venue is determined, then it is the configuration design:

• Comprehensive configuration design depends on the Adequate funding and spacious space. Then map out the laboratory with different nature and type. Such as R & D room, quality control room, precision instrument rooms, medical room, high-temperature heating room, pre-treatment rooms, chemical laboratories, the sample room etc. They are suitable for large enterprises and research institutions.

• Selective configuration design: Due to funding and space considerations, The comprehensive design can not be incorporated into. Therefore, we can only choose the applicable product, function to be concentrated planning. And it is applicable to small and medium-sized laboratory.

The above factors are determined, a laboratory design layout and planning content can be drawn, the next is to consider the three key factors which maybe impact the construction in future:

1. The construction methods for inlet and drains.
2. Total energy consumption and distribution in laboratory.
3. The line for duct of exhaust equipment, fan motor displacement calculations.

The construction methods for inlet and drains:

Buildings under construction: the design plan must be provided to architects, then according to the position distance measurements in design plan, to underground pipe, or to set aside a hanging pipe into the body construction of the building.

The space is Construction completed or used many years then changed into laboratory: because the above-mentioned two kinds of building is not design for laboratory use, so most inlet and drains are not used any more, therefore need to find the source of inlet and drain. Take underground pipe or hanging pipe as the to construction method.

The total electricity consumption and distribution methods in laboratory

Buildings under construction, according to the design plan to set up the appropriate location of the main power switch box, then the electricity is sent to each laboratory.

The space is Construction completed or used many years then changed into laboratory: first find out the existing total power switch to assess the power is whether adequate. If inadequate, then how to increase capacity. By then renovated or compartment,. Take underground pipe or hanging pipe as the to construction method.

The above mentioned the total power consumption for construction. How to estimate it? First of all, asking the users to offer the electricity consumption of the equipment. Such s amperage, wattage figure, to design how many circuits.

Exhaust equipment, duct pipeline, fan motor displacement of the calculation:

• In the construction of buildings: You provide the duct plan routes to the architects. Discussing the establishment of pipe wells, or to reserve way in advance hole reserved.

• The space is Construction completed or used many years then changed into laboratory: first confirm whether there is pipe-wells design. if there is, it can be connected to the tube wells. On the contrary, according to the distance and terrain to find the ideal path of the exhaust pipe.

After the path of the exhaust pipe is confirmed ,then we talk about how it control? Control mode can be divided into:

• → 1 to1 one fan to an extraction point

• 1to N → one fan to multiple extraction points. It can be designed In the same

floor or different floors. And it can save the number of the fans and size of duct.

• N to N → many fans to many extraction points. It can be established according to the different exhaust nature. Such as the inorganic acid-base emissions, organic emissions management.

what is more, it is the most important part, fans displacement and speed of calculation