Critique: optimized facility design for biotech facilities argumentative essay ex...

Business, Company

Biotechnology is one of the fastest-growing sectors of industry in the United States today. The industry is responsible for scientific advances in a variety of very important fields, such as medicine and genetic engineering. The problem with biotechnology firms is that they often deal with substances or processes that are unsafe if not carefully contained. For this reason, biotechnology facilities must be carefully designed with the specific company in mind. Different types of companies working in different sectors of the biotech industry will have different needs, and therefore their facilities will have different requirements.

In the article “ Optimized Facility Design and Utilization,” (2007) Dr. DePalma begins by discussing a certain type of biotechnology facility: the facility that deals with “ disposables.” For biotechnology companies, Dr. DePalma argues, processes with large disposables are ideal; however, for the designer of such facilities, these disposables create a problem. Firms working with large amount of disposables may need special internal mechanics, like heavy-duty elevators and specialized ventilation and disposal units. Dr. DePalma then states that because of the issues that biotechnology firms can face due to the problems and expenses of large-scale disposable solutions, many firms have migrated towards hybrid facilities that use both disposable and permanent solutions. However, research suggests that biotechnology firms are still migrating towards the use of disposable technologies regardless of the waste produced, if only because the per-unit cost of many disposable technologies is so low (Fox, 2005).

Dr. DePalma also suggests that smaller biotechnology firms are on the rise. The suggestion is that building smaller facilities is more economically-

feasible in a slow economy, and these smaller facilities are more likely to succeed. In addition to being more economically feasible, Dr. DePalma also states that even small facilities, due to major advances in technology, can now produce “ preclinical” batches of drugs or chemicals. There does seem to be a growing interaction between traditional, large-scale manufacturers and these small-scale biotechnology facilities; the larger-scale manufacturers pour money into the small-scale facilities for research and preclinical batches of drugs and other chemicals (Fox, 2005).

“ The growing significance of smaller facilities,” DePalma writes, “ arises from big pharma’s ongoing fascination with biotechnology and its need for pilot facilities to serve preclinical and early clinical-stage products” (DePalma, 2007). DePalma has pinpointed a key aspect of biotech facility design: not only do these facilities need to be outfitted to perform research, they must be outfitted to perform clinical trials. Flexibility in design is fundamentally important for small-scale biotechnology firms, and it is a point that DePalma does not emphasize enough; indeed, some elaboration on the difference between a large-scale and small-scale facility would be ideal. Many small-scale facilities are being used for biotech development, but large-scale biotech production is also important. DePalma glosses over the difficulties of running a large-scale biotech production operation in this article; instead, there is an idealized view of different types of biotechnology firms working together in harmony. In reality, biotechnology firms often suffer from poorly-suited facilities and intense regulatory procedures (MassBio).

Ideally, a biotech facility will be one that is specialized enough to the

company’s product that it can produce a streamlined process by which the product will be made, but generalized enough so that the company can change its production strategy at any time. DePalma also glosses over this idea in the article, instead focusing on larger biotechnology firms with the means to buy or hire a series of smaller firms to handle different aspects of their output.

Works Cited

DePalma, A. (2007, May 1). Optimized Facility Design and Utilization. GEN: Genetic Engineering & Biotechnology News - Biotech from Bench to Business. Retrieved February 8, 2013, from http://www. genengnews. com/gen-articles/optimized-facility-design-and-utilization/2114/

Fox, S. (2005). Disposable Bioprocessing. Pacific GMP. Retrieved February 6, 2013, from http://www. pacificgmp. com/Files/Disposable_BioProcessing. pdf

MassBio. (n. d.). Community Guide to Biotechnology. MassBio. Retrieved February 5, 2013, from http://www. massbio. org/writable/editor_files/massbio_communityguide_052510. pdf