





# PRODUCT DESIGN SERVICES

### INNOVATING THE FUTURE

## PUSHING THE BOUNDARIES OF INGENUITY AND SIMPLICITY< EVERYTIME

At Innovative Solutions Plus, design engineers of all disciplines play a critical role. In part because appropriate conceptual designs will profoundly influence a solution's durability, usability and features. More importantly, because our clients require ingenious but straightforward design solutions that cut costs as well as increase reliability and productivity. As such, the activities range from a conceptual design during the quotation phase or a feasibility study, to the performance of FMEA studies and detailed engineering work on production drawings through operational, testing and commissioning.

The design department continually takes on new projects and invent new techniques and principles regularly. The work demands creativity – by all team members contributing until the best solutions are achieved. Because simplicity reduces costs and improves reliability, often the challenge does not only lie with the identification of a solution, but with the refinement of a simpler solution.

# **Conceptual Design:**

Basically, conceptual design is the very first stage of the product design process, where drawings and other illustrations or models are used. It serves to provide a description of the proposed product, in terms of a set of integrated ideas and concepts about what it should do, behave and look like in a way that is understandable for the client. It is the design of interactions, experiences, processes and strategies and is the point at which people, knowledge, products, services, processes and profitability meet vision and endless possibilities are only limited by the designer's imagination. It's grounded in more abstract thinking until a detailed design is ready to be created.

Design Engineering:
Design Engineering is the phase where the design is detailed, refined, whilst the planning, specifications and estimates are

The detailed design can include outputs such as 2D and 3D models, simulation, build list, procurement plans, manufacturing plans, testing procedures and operation & maintenance manuals etc.

The design process may include:

- **Mechanical Design**
- **Structural Design**
- Hydraulic Design
- Electronic / Robotic Design
- **Electrical Design**
- **Software Development**

This phase is also where the full cost of the project is identified by using the build lists and procurement plans to develop estimation or budgets. Detailed design is such a fundamental necessity to manufacturers that it exists at the intersection of the product development processes.

Shortening the product development lifecycles and increased product complexity, companies are feeling immense pressure to improve their detailed design process and capabilities.

Product Development:
The product development process typically consists of several activities in the potentially complex process of delivering new products to the market. Innovative Solutions Plus use a process management approach to provide a structure that is easily controlled, to deliver quickly what its clients are looking for. The product development process is articulated and broken down in the same four stages of a standard project management life cycle:

• Initiation

- Initiation
- **Planning**
- **Execution**
- **Finalisation**

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