SLIMHAUS TECHNOLOGY SDN BHD

PIONEERING MALAYSIAN IBS MANUFACTURING AND CONSTRUCTION COMPANY ACHIEVES COMPETITIVE EDGE THROUGH TECHNOLOGY

Slimhaus Technology Sdn Bhd operates as an Industrialised Building System (IBS) manufacturing firm, specialising in the creation, production, and assembly of modular steel structural components for various residential structures, including landed homes, chalets, single-unit dwellings, and residential buildings of up to 3 stories. They are a pioneering Malaysian IBS manufacturing and construction company. In essence, their core focus involves designing and fabricating a range of steel-framed elements used to construct an ever-expanding variety of modular IBS buildings.

NEED FOR TECHNOLOGY INTERVENTION

Slimhaus Technology faces significant challenges as it ventures into the world of IBS manufacturing in Malaysia. Although IBS has a long history internationally, it has only recently gained traction in the country. The foremost hurdle is developing a viable design using advanced CAD/CAM software and modern fabrication techniques to ensure precision, quality, and safety standards. The driving force behind this effort is to address the pressing need for affordable, aesthetically please, and high-quality modern housing, a problem that has been relatively overlooked. Challenges include the absence of local standards, limited access to fabricating machinery, misconceptions about IBS, and a shortage of skilled labour. The design process involves architectural sketches, detailed component designs, 3D CAD/-CAM iterations, engineering feedback, prototyping, component cataloguing and manufacturing.

INTEGRATED CAD/CAM FOR OPTIMISED EFFICIENCY

Their primary digital design solution is SOLIDWORKS, employed from concept to final blueprint. The advantages of using SOLIDWORKS for digitalisation were rapid, organised and highly productive, offering an infinitely scalable design software solution at a fraction of the cost compared to other providers.

Slimhaus Technology collaborated with local vendors to develop their custom robotic welding cell, a process that involved extensive research and development, trial and error, and associated costs. The integration of 3D CAD/CAM models significantly facilitated the customisation of their fabrication machinery. It allowed for swift corrections and modifications to design errors or changes, thanks to its 3D drawing and assembly tools and built-in assembly error prompts.

Assessing the success of their implementation is subjective, but in a startup like Slimhaus Technology, speed is paramount. Technology and design evolve rapidly in the modern era of industrialisation, and they have efficiently completed all R&D tasks while utilising SOLIDWORKS. Profitability is contingent on ongoing R&D. They are confident that SOLIDWORKS will continue to help them evolve in sync with various industries, staying current with the latest design technology advancements.

HIGHLY COLLABORATIVE AND SEAMLESS TRANSITION

The IBS manufacturing industry is a fusion of expertise from various fields, including architecture, civil engineering, construction, mechanical engineering, IT, robotics engineering, and manufacturing machinery engineering. Therefore, an adaptable CAD/CAM software like SOLIDWORKS is an ideal fit and essential to accommodate this diverse range of technical design approaches. SOLIDWORKS provide them with a comprehensive design tool for precise 3D modelling, specifications, and seamless transition to actual manufacturing practices, specifically in architectural and structural steel fabrication for Industry 4.0 readiness.

- **Design Process**
  The design process, from start to finish, was smooth and well-organised with SOLIDWORKS. It allowed them to swiftly generate 3D models, make rapid adjustments, and accurately translate them into functional prototypes.

- **Reject Rates**
  SOLIDWORKS has eliminated reject rates, as the fit and precision of interconnected components are predetermined and verified within the software. Additionally, SOLIDWORKS offers a wide range of plug-ins to enhance and empower the overall design process.

- **Learning Curve**
  The learning curve for operating the software was not as steep as anticipated, thanks to its intuitive interface.

Slimhaus Technology emerged from the realisation of the imperative to modernise and industrialise the construction sector. Their vision is to continually invest in design technology, encompassing product design, hardware, and software, with the ultimate aim of revolutionising the construction industry. This transformation will address crucial issues such as enhancing design safety, ensuring cost-efficiency in the production of high-quality precision homes and implementing active and passive AI technologies to enhance quality, production efficiency and consistency control.

> In our pursuit of these objectives, we view IME as a strategic partner. It will require a collaborative, multidisciplinary effort, and the establishment of a structured working group will propel us toward a promising future in the construction industry.
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> **Ar. Gerald**
> *CEO & Director of Slimhaus*