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Gemilang's Sustainability by Design



Sustainability as a design approach is offering a way to reduce the impact on the environment while at the same time ensuring that the company has products that will be in demand in the years to come.



named as being crucial. Thanks to the modular systems approach, each bus is customisable.

With requirements changing over the years, the product portfolio of Gemilang Coachwork includes some

As a company, Gemilang Coachwork Sdn Bhd has long since gained a reputation that is recognised beyond the shores of Malaysia. Located in Johor Baru, this leading environmentally conscious bus and bus body manufacturer has made sustainability their core value in order to ensure the company is fit to compete in the years to come as well as reducing the impact on the environment as much as possible. Headquartered in Malaysia and listed on the stock exchange in Hong Kong, Gemilang Coachwork has built unique expertise and knowledge in designing and building bus and coach bodyworks as well as assembly of buses and the seamless aftersales service and maintenance. With a total workforce of about 400 staff, the production capacity is 1 200 units annually.

Versatility and adaptability are the name of the game, which Gemilang Coachwork has demonstrated over the past three decades of being in business. While the need for transportation is a universal need, the specific requirements differ from market to market. Being able to adjust products to the respective road safety regulations, Gemilang Coachwork managed to penetrate 15 markets by now. Key markets include a diverse range from Singapore to Australia, Hong Kong to the USA. When asked about the main consideration to make this happen, it is the relationship with chassis manufacturers that is



very unusual bus models. The latest trend is to have three doors in buses, which allows for faster embarkation and disembarkation with the added effect that passengers automatically disperse more evenly throughout the vehicle. Double-deckers are in demand while articulated buses have yet to become a more common product in Malaysia and Singapore.

“The interesting design feature is that a double-decker bus only needs one aircon unit on the roof while an articulated bus requires two units, which makes such bus more expensive,” Pang explained. Sunway’s electric bus fleet is part of the track record as are school buses for the US as well as ambulances, police buses and fire trucks.

Apart from the soft factors of human relationships, this success story is founded on the design approach to offer a more sustainable solution for the global bus market. Embracing green technologies, Geminlang Coachwork is characterised by the use of an aluminium superstructure. As a modular system, the superstructure is using bolts, rather than welds, offering a number of advantages.

Managing Director Mr Pang Chong Yong highlights them: “Aluminium is lightweight, which means that our buses are more fuel efficient. Also, the transportation of the beams is not impacting the environment as much for the same reason. Furthermore, aluminium can be recycled for several times and used in other applications if need be.” Bolting frames together means that cold assembly is possible and wastage is reduced when joining the struts. In climates found in Malaysia, Singapore or Hong Kong, corrosion free aluminium translates into improved safety and durability. Additionally, the bolted frames are easier to repair as only those segments that are damaged need to be replaced, which is done easily. The net result is an overall lower total cost of ownership (TCO). The use of bolted superstructures allows for such kits to be exported and then used by bus builders in other countries too. In terms of

strength of the superstructures, the concept has been proven and tested as planes use the same principle of bolted (riveted) parts.

Bolting aluminium superstructures has the advantage that it is less labour intensive while also offering improved consistency of the finished product. Pang also highlights that the aluminium superstructures are very suitable for electric buses as the lower weight supports the additional weight installed by current battery packs. Each kilogram saved for the superstructure translates into higher range as more battery capacity can be added. The aluminium structures are sourced from Switzerland, according to high standards, which may make Geminlang Coachwork one of the greenest bus builders in the country.

With this, Geminlang Coachwork might be riding the current trend as many countries are pushing for emission free public transport in cities, which Pang identified as a global trend. “We are committed to providing the greenest overall bus body possible,” he said. Overall, it can





be said that the industry is in a transitional phase at the moment with many new technologies being trialled, however, they all aim to achieve the same emission reduction. The lightweight structures are ideal for battery electric and hydrogen buses as the weight of heavy batteries and tanks is offset by the weight reduction through the use of lightweight metals.

Therefore, Corporate Social Responsibility, CSR, is not a separate activity, but in the view of Pang and his management team it is a duty that should be at the heart of the organisation. Paraphrasing this, Pang elaborated that CSR is about making a positive impact on society. It is no wonder that the company has invested in solar panels to power the plant and thus reducing the impact on the immediate environment. In embracing CSR, the company aims to become more environmentally friendly and eco-conscious but does not stop there. Promoting equality, diversity and inclusion in the workforce are considered parts of this CSR approach. Ensuring business decisions are ethical and treating employees with respect are aspects of that same CSR approach that also sees the company giving back to society.

By extension, this CSR approach is manifesting itself in how the company sources raw materials and evaluates the entire supply chain. "Certainly, price and quality are important factors, but these are not the only ones when considering a supplier. We evaluate our vendors in more ways than just scrutinising their payment terms." As one of many examples Pang cites the requirement for suppliers to renewable energies, such as hydropower to produce the extruded aluminium alloys. Plywood used in the buses must be sourced from accredited vendors that partake in reforestation programs. Pang noted that global customers are now emphasising the need for their coach and bus builders to implement programs to protect mother nature.



Mr Pang Chong Yong,
Managing Director

Internally, these ambitions are supported through training of staff on Environmental, Social and Corporate governance (ESG). Gemilang Coachwork is working on further reductions of carbon emissions. "We may have a certain myopia, so we hired a consultant to guide us in our journey." Pang's ambition is to further improve the brand's standing in the industry as an environmentally responsible organisation which may encourage others to also take up the task and re-engineer their businesses towards a greener future. The result is evident when walking around the yard: the production is clean, there is very little waste material present and work stations are clean.

Gemilang Coachwork values any opportunity to talk about their ambitions regarding CSR as the management team believes that the general public is mostly unaware of the industry behind the beautiful vehicles on our roads. Just like everyone else in the industry, Gemilang Coachwork agrees that there is not enough positive publicity to attract talent. Generally speaking, the public does know very little about the industry, which may be as profound as understanding that the chassis and body are most times made by different companies and a bus only comes to live once these two components are joined. "It is therefore not surprising that people do not know about the impact of environmentally friendly buses. How can they if they are not even aware of the industry as a whole?" Pang asked, hoping that with the push for more sustainable transport solutions more attention will be given to the companies involved in the background.

Designing buses, the safety, longevity, and durability of the vehicle is paramount. A major part of the development process focuses on testing. Although it is now possible to simulate roll-overs on a computer, Gemilang Coachwork also maintains test rigs to simulate safety-critical situations using fully assembled buses. "Naturally, this is a very expensive exercise, but sometimes this allows us to learn more about our design than what we can glean from a simulation on our PC." Although programming the simulations can take weeks, it is admittedly a helpful tool as such simulations do not damage actual vehicles while at the same time satisfying requirements in several markets to prove their stability.

Knowledge management is a crucial aspect of building buses and coaches for international markets as requirements differ from ADS compliance in Australia to UNEC regulations applicable in most other countries. With these test facilities on hand, Gemilang Coachwork's engineers are able to work on homologation requirements, further





supporting clients abroad. “We learned the hard way from back in 1997 when we first entered the Australian market and we went through a steep learning curve to meet their local requirements,” Pang reminisced.

It is not surprising that Gemilang Coachwork has become a preferred provider of transport solutions. Among the many firsts the company can proudly claim that the first buses operating as shuttles on the Hong Kong-Zhuhai-Macao Bridge. In more recent developments, the autonomous bus operating on the premises of Singapore’s Nanyang Technological University (NTU) was also manufactured here.

Currently the team is learning about Advanced Driver Assistance Systems (ADAS), which Pang hails as some of the best additions that any bus operator could add to their vehicles. Although adding to the cost, the systems oftentimes prevent accidents that would be more costly than the added ADAS. According to Pang, many operators do not factor in downtime and increased insurance

cost an operator is faced with if accidents occur. He wished that more operators would try ADAS as he is convinced that the ROI will become evident very quickly. Standing ready to assist clients, Gemilang Coachwork also dispatches teams to troubleshoot and rectify any issues encountered.

The value of approach to sustainability taken pays off in more ways than just repeat customers coming back for more. Buses made by Gemilang Coachwork are known for their durability and typically, vehicles on the secondary market are being snapped



up very quickly as they are known for being fabricated to the highest standards. "Certainly, the effort we put into our buses is adding a little bit to the cost. However, if one is looking at the overall cost over the lifecycle of the vehicles, then this is easily justified," said Pang.

Electrification is a hot topic at the moment. Generally, markets are turning away from fossil fuels and Gemilang Coachwork is gearing up to meet these new demands. Bottlenecks are still be seen in the provision of infrastructure, which has to be developed in tandem with the roll-out of new generation buses. In parallel, requirements for skills and knowledge are changing too. Staff will need to learn new skills and be aware of the implications of going electric. "While our buses are now going into the fifth generation and are therefore ready for electrification, the eco system may not be ready yet," Pang said. Revolutionising the industry, the switch from steel to aluminium, was a watershed moment for him. "Another such event is upon us with the movement towards greener technology used in transportation."

While looking ahead enthusiastically again after the pandemic, there are also challenges. For starters, the decision when to switch to electric or hydrogen-powered vehicles is a tough one as the cost is still very high and although there are now economies of scale, batteries are getting more expensive. Additionally, talent acquisition has been and can be expected to continue to be an issue for the transportation industry. "We, as an industry, need to join forces and promote the industry to youngsters as a professional and rewarding career path." Being an internationally oriented company, Gemilang Coachwork is also offering the intrepid staffers the opportunity to explore the world. "Sustainability is not just a fancy word for us. It transcends the design, the company's philosophy and the way we see career progression. The latter is important as we realise it is the continuity our workforce offers that enables us to be sustainable," Pang concluded. 📌

