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Mazak Trip – Student Activities

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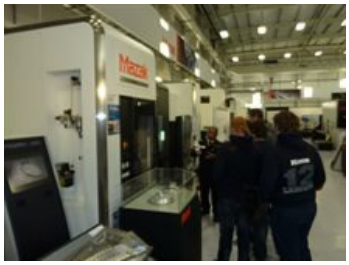
By Daisy Partlow, 2nd year Mechanical Engineering student

The second year mechanical engineering students were very kindly invited to visit the MAZAK European Technology Centre (ETC) on the 4th of November. Alan Mucklow, Group Product Manager, welcomed us and outlined the mutually beneficial collaborative links with the UoB that included the support for our Formula Student team, year in industry placements for students, the loan of two state of the art milling and turning machine centres for teaching and research, and these already traditional student visits. He also stressed that Marcus Burton, Group Managing Director Europe, and he together with five other Birmingham alumni at Yamazaki Mazak UK would like to build upon and develop further this collaboration. Then, the day included talks by Dr John Liverton, Product Manager, on Mazak's range of machine tools and design philosophy and Mark Hall, Product Manager on interesting application stories followed by a lecture on machining processes by Professor Stefan Dimov. After lunch the visit continued with a tour of both the manufacturing plant and the ETC that showed a range of Mazak machine tools in action. MAZAK is renowned for its innovative ideas, especially in the development of multi-tasking machine tools, which combine milling and turning operations in the same machining setup. The ETC is an amazing example of how continual investment and improvement, despite hard times, can ensure that the company will continue to invent more powerful and ground breaking solutions.

Some of the main features and highlights that became very central to the trip were how the CNC machining centres invented for a specific purpose was so "tailor made" for a wide range of applications and industrial sectors. The precision engineering continuous developments together with the advancement of Mazak's Done-in-One philosophy resulted in a huge reduction of machining times and personnel necessary, while increasing the accuracy and precision of the parts produced, due to the reduced need to transfer parts between multiple machining centres. Another example of how the company has been addressing the constantly growing requirements of its customers is the development of spindles with an integrated motor for their own machine tools and thus to reduce the external effects of vibrations on the machined parts. The student's exposure to such high-tech machining solutions in comparison to the first year workshop training on universal machine tools, showed and demonstrated in practice the advancement of machining technology and the impact on industry this has made. The lesser reliance on outsourced components allows the company to produce very reliable and high performance machining centres while being able to provide continued after sale customer support. Also, the company's vision for a continuous advancement of their product range is exemplified by the ergonomic designs of all their machines, influenced by a famous Japanese industrial designer, Ken Okuyama. The ergonomic design allows for excellent accessibility to the machining area.

As mechanical engineering students, it is safe to say that the machine tools used to create objects are taken for granted which means the use of hand files and taps are no longer needed. This trip was a huge eye opener into just how much engineering is required for such impressive pieces of machinery, and the huge impact on a business having one of these machines could make. For some the realisation that this could be a viable job option after graduation was exciting, as the challenging environment and ever varying problems the industry faces allows room for constant growth as an engineer, as part of a global company.

As a University and as a group of undergraduates we would like to thank MAZAK for the insight and enthusiasm they have given us about becoming engineers in the future.



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