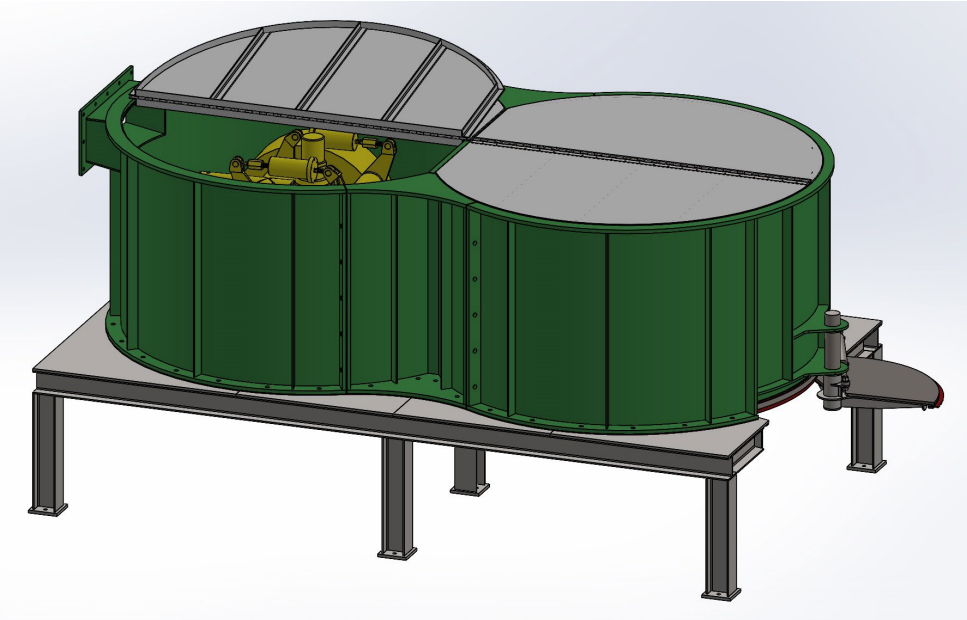
ENVIRONMENTAL TECHNOLOGY: CONCEPT DESIGN OF MIXING/DENSIFYING UNIT FOR MINING FINES

At FCL we are dedicated to what we do, and we greatly value the opportunity to forge long-standing relationships with clients who appreciate the value-added, high-quality service that we provide. A recent example of how such relationships can begin is provided by our experience with a company based in Northern Ireland who approached us for assistance with the task of developing a mobile plant capable of converting waste fines from coal mining activities into a viable fuel source, thereby permitting the economical clean-up of legacy waste and a reduction in CO_2 emissions.

At the outset of the project, FCL made a member of staff available to travel to our client's premises for two days of meetings aimed at obtaining the necessary in-depth understanding of their objectives. Based on the information gathered, FCL then applied their experience in design and manufacturing to develop the proposed concepts into practical designs that would be as straightforward to fabricate as possible. An early step taken was to reconfigure each of the principal components such that these could be mounted on frames compatible with standard ISO trailer fixings, such that the plant could be readily transported from site to site in modules. Another key design innovation was the introduction of wear resistant base plates to the mixing and densifying chambers, manufactured from Hardox ® steel. Due to the difficulties associated with welding this material, this in turn led to the proposal of more widespread changes to the designs in which the chamber side walls were bolted down to the base plates rather than welded.



With FCL's initial involvement completed by the production of 3D CAD models and preliminary general arrangement drawings for the principal components, our client was left in a much stronger position to seek the additional investments necessary to bring the product to market. FCL's performance led to us gaining preferred supplier status for the provision of mechanical engineering consultancy services and, with this in place, we are looking forward to extending our working relationship with an increasing involvement in the mechanical design and substantiation of the unit.

Finglow

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