

Advanced Forming Research Centre

A Step Ahead

Customer issue

Scottish start-up company, A Step Ahead, is dedicated to developing highly innovative products for the construction, building trade and domestic markets.

The company developed a rungless ladder mechanism designed for a wide range of construction applications. The proposed product is designed to increase capacity, efficiency and safety on construction sites.

The original prototype design was made of wood and basic metallic components. This allowed the company to demonstrate proof of concept. However, the prototype required further development to give the inventors the confidence to progress to the full patent application and to invest in prototyping the full metal structure.

The inventors needed to prove that the rungless ladder was able to function as designed and withstand the loads, forces and stresses that would be applied to it when in use.

How the AFRC helped

Strathclyde Links, a University of Strathclyde based team, facilitated the introduction between the AFRC and A Step Ahead LLP. The company then undertook the project with the AFRC which was funded by the Scottish Funding Council's Innovation Voucher scheme.

Engineers and researchers at the AFRC provided a detailed analysis of the product design, structural integrity and tolerance limits.

In addition, the AFRC provided advice on material selection which helped the company to identify the most suitable metal alloy for the product.

Business impact

The AFRC's in-depth knowledge of metals and materials science has enabled A Step Ahead to decide to invest in the development of their product and proceed to the next stage. The company will now build and test a set of prototypes using appropriate lightweight, low cost materials.

The output of this project enabled the company to accomplish a more robust ladder design with appropriate material recommendations which will be taken forward with greater confidence by A Step Ahead.

Once appropriate IP and patent protection is secured, approaches will be made to Scottish manufacturing partners and this could lead to additional employment in the local area.

"There was a very good match between our requirements and the capabilities offered by the AFRC. Our product needs to be safe, strong, durable and lightweight. The cost of manufacture is also important. The AFRC had the resources to help us on to the next level. We were also given the feedback and encouragement we needed to give us confidence in our product and approach."

Dave Wagner, Lead Engineer, A Step Ahead

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