

## Beech Hurst Science and Engineering Learning Centre

The Beech Hurst Science and Engineering Learning Centre aims to enhance the learning and public understanding of basic science and engineering, and raise awareness of locally available career paths in STEM. It will do this by building on the fascination expressed by the public, but especially by children, of miniature steam locomotives.

There is much to learn and understand, for example:

- What can you learn from the noise a kettle makes and why?
- Why is the speed of sound relevant to steam locomotives?
- What has the rocket 'Laval' nozzle got to do with steam engines?
- What are the important physical properties of materials in engineering structures?
- Why do barrels roll down two parallel bars without falling off?
- What causes 'water hammer' in pipes at home?
- Why do I hear cracks in the conservatory when the sun comes out?
- Why does a car engine have a clutch and a steam locomotive doesn't?

These are just a few of the interesting questions that answers will be found in our planned Learning Centre. Some of these questions are aimed at young children whilst others will be taxing for the more knowledgeable. There will be artifacts, videos and descriptions covering these and other topics. There will also be interactive activities and we are seeking a CAD system that would allow groups to learn simple design and prototype construction using a 3D printer.

A lot of thought has gone into our planned new facility. It will have a modest teaching and working area, of about 40 m<sup>2</sup> and be located in Beech Hurst Gardens, Haywards Heath. It will be run by volunteers, who will be registered STEM Ambassadors, see <https://www.stem.org.uk/stem-ambassadors> who will be DBS'd, inducted and insured through the programme. The volunteer STEM Ambassadors will encourage the setting up of study groups that will concentrate on 'hands-on' wherever possible. There will always be something new going on with visiting groups bringing interesting science and engineering displays.

As an organisation, The Branch Line is a Charitable Incorporated Organisation (Charity Registration Number: 1178407) and will:

- Encourage more young people to take up science and engineering;
- Put strong emphasis on gender equality both in terms of volunteer staffing and those involved in group studies and activities;
- Have STEM Ambassadors who are role models and are keen to encourage the take up of science and engineering by young people;
- Have a Safeguarding Policy, an Equal Opportunities Policy and strong Health and Safety and Risk Assessment procedures;
- Ensure all volunteers will be subject to an induction programme in addition to the STEM Ambassador induction;
- Listen and respond to the visiting public and develop its displays and activities in response to feedback;
- Develop metrics to measure impact, and evaluate success and failure of displays and activities in order to shape the future development of programmes.
- Encourage science and engineering role models to share details of their STEM backgrounds, their jobs and aspirations which, along with availability of Tomorrow's Engineers careers materials, see <https://www.tomorrowsengineers.org.uk/#> will raise awareness of relevant career path opportunities.
- Seek collaborative partnerships with local schools and STEM employers in order to further objectives and avoid duplication of effort with other local initiatives.

Dr Roy C Preston  
Chairman Trustees – The Branch Line CIO