



IPEM Institute of Physics and
Engineering in Medicine

The Little Linac project

The Little Linac project was started by Professor David Brettle, when he was President of IPEM. His vision was for IPEM to provide every child in the UK undergoing radiotherapy treatment for cancer with a free kit of play bricks to make a model treatment machine (Linac, short for linear accelerator). Toy bricks are every child's favourite toy and are an ideal way to educate young patients about their treatment in a way that is designed to reduce their stress and anxiety, and so contribute to successful treatment sessions.

Every year between 1,500 and 1,700 children under the age of 16 develop cancer in the United Kingdom and the aim of the model is to help reduce the child's anxiety, through play, by allowing them to see and understand what the machine looks like and how it moves around them during their treatment.

After a couple of false starts to the project, IPEM eventually partnered with Best-Lock Ltd, who were quick to grasp what was required and worked with IPEM to perfect the design of the model, the instruction booklet and the packaging.

As well as the linac, the kit also makes three other imaging or treatment machines the child may encounter during their time in hospital – an MRI scanner, a gamma camera and a CT scanner. After their treatment is over, David's challenge to the children is to use the bricks to make something very different: a rocket, a rabbit, a robot, as part of their transition back to a more normal life.

The kits underwent an evaluation day at Leeds Teaching Hospitals NHS Trust, where David is Head of Medical Physics and Engineering, with play therapists, healthcare staff, the patients' families and most importantly, the children themselves. The feedback from that day was overwhelmingly positive, everyone thought it was a fantastic way to help patients.

IPEM brought three partners on board – the British Institute of Radiology, the Royal College of Radiologists, and the Society and College of Radiographers - to ensure that all the professionals involved in children's cancer treatment know about the Little Linac.

An initial order for 3,000 Little Linac kits was placed with Best-Lock and IPEM is giving 100 kits to each of the 16 paediatric radiotherapy centres across the UK to give to children undergoing radiotherapy treatment. The remainder will be sold to generate funds to purchase the next 3,000 kits, so that the project will become self-sustaining.