

PEACE ENGINEERING

Peace is characterised by relationships between individuals, and social groupings of all sizes, based on honesty, fairness, openness and goodwill. Peace provides the conditions for real human flourishing. It is much more than the absence of conflict, much more than the avoidance of war. Crucially, peace is an *activity* that requires continuous commitment and imaginative input.

Engineers have historically greatly underestimated the contribution that they can make to peace. Contrarily, the profoundest tragedy of contemporary engineering is the design, manufacture and use of an immense diversity of devastating and indiscriminate weapons of war. One of the first to articulate this imbalance was Estonian-American civil engineer Professor P. Aarne Vesilind whose pioneering contributions included the development of the concept of *Peace Engineering*, the title of the seminal book which he edited in 2005 (revised and expanded in 2013). Peace Engineering provides a focus for imaginative and effective application of engineering in the promotion of peace. Therein lies a great opportunity for engineers, for they have at their disposal the knowledge and skills to ensure the just distribution of material necessities that forms an essential basis for peace. Moreover, appropriately designed engineering activities can commit even communities in ideological disagreement to shared projects of benefit to all, promoting peace when fundamental value differences remain but become respected through practical engagement.

To realise this great potential, individual engineers, commercial engineering enterprises, university engineering departments and professional engineering associations need to aspire to the creation of a *Culture of Peace* within engineering, a reprioritisation of engineering in the pursuit of peace. The promotion of peace should be regarded as a professional obligation for engineers, just as we are already committed to the promotion of health and safety. Indeed, peace is the vital complement to health and safety when the latter are understood in their broadest senses. Here we can make use of an essential characteristic of engineering: it is an enabling activity that enhances the agency of individuals and communities by providing them with the means of advancing shared goals.

However, peace requires more than engineering, it also depends on a multitude of cultural, societal and political factors. Hence, if engineering is to contribute fully to the work

for peace it needs to align its activities with individuals and institutions whose values, attitudes and actions promote cooperation among communities and nations. Internationally recognised eirenic activities include: fostering a culture of peace through education; promoting sustainable social and economic development; promoting human rights; ensuring equality between men and women; fostering democratic participation; and supporting participatory communication and the free flow of information and knowledge. Engineering can make an important contribution to all of these.

Professor P. Aarne Vesilind died on 28 January 2018. The WEEF-GEDC 2018 Conference provides a most timely opportunity for building on his visionary work by placing Peace Engineering at the forefront of engineering education and practice on an international basis.

Professor W. Richard Bowen, FREng,
Wales, July 2018.