

# Preface

This book seeks to set a new agenda for engineering by developing a key challenge: *can the great technical innovation of engineering be matched by a corresponding innovation in the acceptance and expression of ethical responsibility?*

Central to the elucidation of this agenda and challenge is the consideration of engineering as a practice, a coherent and complex endeavour of persons for the benefit of other persons and the communities in which they live. The practice of engineering seeks to promote the wellbeing of persons in communities and also their agency, their possibilities to carry out desirable and beneficial actions. That is, engineering is essentially an enabling activity.

Professional engineers have at their disposal a range of knowledge, skills, techniques and technologies of great potential. Such capabilities provide engineers with opportunities to enhance the wellbeing and agency of others in many ways. This book analyses these opportunities using examples from three key areas: engineering for peace, engineering for health and engineering for development. Furthermore, specific ways in which the acceptance and expression of ethical responsibility by individual engineers can be promoted are described, particularly participation in social settings that stimulate generous ethical action. Strategies for convincing decision makers of the ethical opportunities of engineering are proposed, including a human rights approach and consideration of engineering power, the ability to attain desirable social and political outcomes through the peaceful use of engineering capabilities. Future prospects for increasing the acceptance and expression of ethical responsibility by engineers in an extended time frame are envisaged.

This book provides engineers with a coherent and challenging new vision of their profession. It seeks to stimulate their ethical imagination by providing a convincing description of engineering in terms of the lives that it can enable persons and communities to live, in contrast to the more conventional focus on engineering as the means of providing ingenious technological artefacts. It seeks to promote a new perception of engineering among engineers, decision makers, philosophers and the general public. It is particularly hoped that the book will stimulate a commitment to innovation in the acceptance and expression of ethical responsibility by engineering students and young engineers.

I am thankful for the many discussions with colleagues that have benefited the development of this book. Such development has also benefited from the questions and discussions that have followed invited lectures to engineers, scientists, philosophers, theologians, political scientists and lawyers. I particularly wish to thank Iselin Eie Sokhi for perceptive comments on all aspects of the text as it was being written. During the final preparation, the encouragement and effectiveness of Anthony Doyle and Gabriella Anderson at Springer have been much appreciated.

Any new vision looks to a better future. This book is hence dedicated to Annika Eie Nicholas in the hope that she may grow up in a world in which engineering truly promotes peace, health and development for all.

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