# Technology in a Sustainable World

Wiki the word "technology" and you will find that it is a word that refers not so much to "hardware" and 'widgets' but more to our 'knowledge' of tools and crafts, systems and organisation used either to control and adapt to our environment. Significantly and unwittingly, in the space of just a few centuries "technology" has become almost an absolute value in characterising our relationship with our planet, other people and our sense of the future. In the process we confuse technology with ingenuity, innovation, creativity and even humanity itself.

The result has been, as American architect William McDonough described a few years ago in an excellent book titled 'Cradle to Cradle', to create a cultural and economic system that:

- 'puts billions of pounds of toxic material into the air, water, and soil every year
- produces some materials so dangerous they will require constant vigilance by future generations
- results in gigantic amounts of waste
- puts valuable materials in holes all over the planet, where they can never be retrieved
- requires thousands of complex regulations not to keep people and natural systems safe, but rather to keep them from being poisoned too quickly
- measures productivity by how few people are working
- creates prosperity by digging up or cutting down natural resources and then burying or burning them
- erodes the diversity of species and cultural practices'

McDonough was describing the 'cradle to grave' world of the industrial revolution – a massive historical process that on a global scale has led to exponential human population growth, energy scarcity and vulnerability, global warming and climate change, environmental and cultural degradation, and unfair distribution of wealth where one fifth of the people on the planet live on less than a dollar a day.

The 21st century human response to all this must be the defining theme of this and the next three generations. It will be the Sustainability Revolution and it will be characterised by a fundamental reorientation in values, processes, relationships and technologies.

To ensure the very future of the planet and our species, over the next 50 years we will move necessarily from the 'Cradle to Grave' way we currently do things to a smarter 'Cradle to Cradle' world of resource efficiency involving closed loops, zero waste and zero emissions. Just to ensure the viability of the people who will live here over the next 100 years we will have to improve our technological capacities at least by a factor of 10. If the people of China and India were to live like us they would need their own planet. The implications are obvious.

Most importantly (and f bcd or some quite radically) the technology we use to build a sustainable world will draw its inspiration not so much from the thinking, inventions, and contraptions of the industrial past, but rather from the basic models of life itself – the natural and living systems of our Earth.

Biomimicry will provide the essential technology framework of the 21st century and it will mean a revolution in technology not yet fully imaginable but which has been with us for eons

– for example, energy from sunlight, molluscs creating ceramics harder than steel in water at room temperature and spiders spinning fabrics in the backyard stronger than kevlar.

So in the world of the next few decades where just cleaning up the industrial mess will be a trillion dollar industry, where carbon emissions trading will be a $15 trillion market, where human health will be defined not so much by the state of our knowledge of genetics but by the environmental realities of global warming – in this world we will see changes that are tectonic in scale.

And technology, reoriented and redefined, will play a crucial role providing the tools in such fields as new materials, renewable energy, biomemetic products, nano and genetic sciences, and cybernetic intelligence. Technology indeed offers to play a promising role in shaping our future.

But above and way beyond this elementary feature of the future, there remains a much greater challenge in our quest for sustainability. That challenge is to reshape our values and our sense of ourselves so that we might recast our vision for technology from one that abets our primal domination of our environment to one that assists, explores and realises life on earth as a living system and our part in it. Only then, as T S Eliot write in Little Gidding, will we "arrive where we started And know the place for the first time".