

Engineering Misery:

HUMAN DEVELOPMENT INDEX IMPROVEMENT

Whatever the shortcomings of Western culture in the last century, nobody could dispute that engineering is one of our glories? But can it safely be assumed that engineering is immune to cultural collapse? A paper by Peter Head “based on the author’s touring Brunel international lecture” in the May 2009 *Proceedings of ICE* (ICE = Institute of Civil Engineers), “Entering an Ecological Age: the Engineer’s Role”, uses exactly the same language as is demanded from the religio/cultural prophets of the dailies and weeklies. One little symptom is the compulsiveness of the word *model*. First sentence: “The world’s dependence on using fossil fuels made millions of years ago can only be a finite model that will end with the fuel running out.” Why not, “The world’s dependence on fossil fuels can only be finite and will end with the fuel running out”? What does *model* add? “After the first oil-price rise in the 1970s, concerns about the limits to this growth model started to be raised.” Again, for “this growth model” read “growth”. There is an impending oil shortage: “oil will not last forever and it may become an uneconomic growth model to move to new sources” For “an uneconomic growth model” read “uneconomic”.

The thing worth comment is that in the whole lecture there is no mention of engineering. What to do about “severe insecurity” of food supply, “notably in Africa”? “The more food that is imported, the higher the risk of loss of a stable, healthy future supply. This can be addressed through closed-loop resource management and new efficient production technologies.” Whatever closed-loop resource management may be, the question for Africa would be *how* it can be applied under régimes such as that of Zimbabwe; but whatever methods are used they do not fall under any heading of engineering. Politics is not engineering.

This article is all about a vision of the future, the ecological age. It isn’t much of a vision. What hope is to sustain the “average global emissions reduction” and “ecological footprint decrease” taken for granted to be the two first great goals? The answer is: “human development index improvement”. Human development is getting individually richer (“raise . . . GDP/capita”) living longer and getting more education. If education is understood in the Blair education-education-education way (and how else?) this is a vision of a life not worth living. GDP/capita, life expectancy, education. “I’d be bored.” (Simultaneously, suicide clinics may be expected to be much improved and frequented.)

Imagine for a moment that Peter Head’s paper had been given in 1209 instead of 2009, though in the idiom of the later year. The cultural assumptions would have been different. “It is beyond argument that the great challenge facing engineers in the next century will be to implement the Gothic style of architecture in the construction of huge stone buildings. The challenges for instance of transporting and hoisting large blocks hundreds of feet in the air, and of calculating stress in the new pointed stone arches, are unprecedented. But the vision of the Kingdom of Heaven shown by the abbeys and cathedrals will sustain the engineers.” This seems, as well as being actually about engineering, to depend on a vision more likely to inspire than wealth, life expectancy and education-education-education.

As is the scientific practice, the paper was commented on in the next issue—very briefly, for we have progressed beyond the days of Brunel when replies could be lengthier than the original paper—with a reply from the author. The only point made in the replies and the reply to the replies was that population limitation should be considered, though it is recognised that this is not an engineering matter. (Social engineering, it used to be called.)

Could it be that we shall escape the ecological age and human development index improvement through lack of engineering expertise and suitable workmen? that the goals will be so conceptually confused or so uninspiring that engineering will run down? This morning (27 August 2009) the BBC reports an *engineering* project to erect artificial trees along the motorways to extract carbon dioxide. The extracted gas, like the carbon dioxide from “clean” coal-fired power stations, and like nuclear waste, would be stored indefinitely underground. Real trees, by the remarkable process of photosynthesis, inhale carbon dioxide and exhale oxygen. To call the proposed contraptions *trees* is a sign that the relevant engineers don’t know what they are talking about.