CAAD's Seven Deadly Sins

Thomas W Maver
ABACUS, Department of Architecture and Building Science
University of Strathclyde
Glasgow, G1 1XQ
UK

This short paper takes a critical view of the direction of research and development in Computer Aided Architectural Design over the last five years of its twenty five year history. The criticisms are set out as seven deadly sins which, in summary, are: macro-myopic, déjà vu, xenophilia, unsustainability, failure to validate, failure to evaluate.

Keywords: computer-aided architectural design, research and development

Introduction

Those of us who have participated in the development of Computer Aided Architectural Design over its short but dramatic history have been privileged indeed. We have seen the subject grow from the minority time activity of a few eccentric academics to a multi-billion dollar international industry. Developments in the technology have given us, at an ever accelerating rate, both functionality and fun.

The intellectual challenges of the subject have put the proponents of CAD centrestage in the ongoing debate on design methods and theories.

Nonetheless, a critical view can be taken of the direction which research and development in CAAD has taken over the last few years. These criticisms are articulated, somewhat provocatively, as CAAD's seven deadly sins.

1 Macro-myopia

Much of the antagonism exhibited by architects and the architectural press towards CAAD back in the rate 1960's was occasioned by the over-zealous claims made by the early pioneers. The promises held out then have, by now, been amply fulfilled and exceeded, but the fulfilment took rather longer than expected. This phenomenon of overestimating the short term impact but under-estimating the longer term impacts is well known in technological forecasting and is termed macro-myopia. Unfortunately it is still rife in todays CAAD community; it is almost impossible to find a PhD thesis which claims anything less than an all-singing, all-dancing, fully integrated, multi-disciplinary design decision support system which does the business as soon as you press the start button.

2 Déjà vu

It is extraordinary to observe, with increasing frequency, the emergence of 'new' ideas in the field which have striking similarities to early, abandoned and almost forgotten work from two decades ago. While it is flattering to the pioneers to have many of these relevant ideas re-visited, it is sad that the current effort does not build upon what went before.
3 Xenophobia

The obsession with importing concepts and procedures from other disciplines - from language through to artificial intelligence - has diverted intellectual effort from the central task of identifying and understanding what lies at the heart of architectural design itself. The absence of a core research discipline make it increasingly difficult to argue for funding which targets the real problems.

4 Unsustainability

Increasingly, the greater proportion of research and development effort is devoted to facilitating the practice of architecture with correspondingly less attention given to achieving design solutions which yield improved quality to the building client and user; in other words the R+D effort is focused on the architect, not on the building. Such work that is focused on the building is predominantly concerned with form rather than function, style rather than substance. Concern with fitness-for-purpose, cost-effectiveness and environmental sustainability has all but disappeared from the R+D agenda.

5 Failure to validate

Each new international conference generates a plethora of ever more exotic claims, few if any of which are substantiated by prototype implementation let alone validation. In any other discipline the generation of hypotheses without some rudimentary testing, would be laughed off the conference platform.

6 Failure to evaluate

Even when prototype software development has taken place there is little recorded evidence of investigation of its usability and functionality in teaching or practice. The absence of any credible user feedback means that further research and development is undirected and vulnerable to academic drift.

7 Failure to criticise

Above all we have failed to exercise our critical faculties in relation to almost all of the research and development carried out by ourselves and by our peers in recent years. There has been a cozy conspiracy in the community to condone, even encourage, selfindulgent speculation and solipsism - a thoroughly bad example to set for young people in the academic community.

Conclusion

Perhaps these criticism are unjustly hard. Hopefully CAAD Futures 95 will prove me wrong or at least provide the opportunity for discussion.