

INSPIRING CONSTRUCTION MANAGEMENT

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ARCOM has made considerable progress in 25 years. It has become an internationally recognised and respected part of the academic world especially for its support of the development of the individual researcher and the discipline of construction management. Given today's environment for research, would it be possible to set up an organisation in the same mould as ARCOM or would such an organisation need to take a rather different form in terms of means of support and 'buy-in' from the research community? Although there is no definitive answer, it is useful to look at how the current environment of research has shaped the organisation another research community, albeit of more recent origin and in another field. Comparison of the development of this community with that of ARCOM provides some important indicators of both what has been achieved by ARCOM and the importance of that achievement.

Keywords: research community, research network, research infrastructure.

INTRODUCTION

In 1982 the Science and Engineering Research Council (SERC), the forerunner of the Engineering and Physical Sciences Research Council (EPSRC), established the pioneering Specially Promoted Programme in Construction Management (SPP). This was to provide a focus for the increasing concern of government and industry that academic research should embrace the commercial as well as the technological challenges faced by the construction industry. The programme was developed and initiated by members of the academic community most of whom had extensive professional experience. They were close to industry and readily appreciated the technological and organisational changes which were taking place.

The SPP stimulated considerable interest and activity especially in those universities and polytechnics which had departments concerned with the organisational, business and commercial aspects of the construction industry. In the main these were departments of building, surveying, and the like, rather than civil engineering and architecture, although some interest was to be found in these as well. Also, because building and surveying were pursued by just a handful of universities, much of the interest was located in polytechnics.

The SPP supported many projects. Most were led by mature academics with a strong professional background who in turn appointed largely young research assistants to their teams. Before long it made sense to bring the evolving community together, not just through events organised by the SPP, but as a community in its own right.

At an SPP community meeting in Banbury in 1984 a proposal to establish what was to become ARCOM was enthusiastically received. This was followed by another

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meeting announcing the proposal to the wider community of interest, agreeing terms of reference and appointing officers. Yet again the proposal was received with enthusiasm, no doubt spurred on by (the now Sir) Michael Latham, MP, who strongly encouraged those at the meeting to believe that construction management research had a very bright future. Twenty five years later we are able to celebrate a momentous period in the development of construction management research in the UK and the continued development and success of ARCOM. This is no mean achievement, there are many factors which could have led to its demise, especially during periods when there was little funding available for construction management research when career-orientated researchers could have decided to follow other avenues.

This paper reflects on both the development of ARCOM and that of a more recent and quite different research community, that involved with design and engineering research for improving the wellbeing and quality of life of older people. However, even for this community, building research, and more generally built environment research, is an important activity. It is a multidisciplinary area, drawing together designers, engineers, technologists and physical, medical, health and social scientists, with some inputs from the humanities. There is strong involvement with professionals in the field, with end users of research and with beneficiaries. So, there are some strong parallels with construction management research although the focus on processes tends to be less and on the design of technologies and systems rather greater.

Next, there is a brief introduction to the development of university-based design and engineering-orientated ageing-related research which complements the earlier description of the background to ARCOM. Together these provide a context for a discussion of major issues which have affected the development of the two communities.

Despite the differences in focus of the ageing-research community and its environment, these considerations raise some important issues for how best to develop a new research community. Given the changed environment of university-based research it is suggested that under present conditions it would be very difficult to establish an organisation such as ARCOM.

AGEING RESEARCH IN THE UK

It was not until 1996 that the UK research councils took a strategic interest in ageing-related research. EPSRC established its EQUAL Initiative in 1997 (Lansley, 2001; Lansley, 2006), and ESRC and BBSRC established programmes in the following year. Because it was already investing in research into the many diseases associated with old age MRC did not have a focussed programme until 2008, when it proposed and led the cross-research council Life Long Health and Wellbeing programme.

Until 1997 design and engineering-related ageing and disability research was carried out on a small scale by a handful of charities, a few practicing professionals, and occasionally by academics, mostly with little funding support. There were very few research groups or centres with critical mass in ageing and disability across any field but especially in those with a design and engineering base. Although, SERC/EPSRC had played a key role in medical engineering this was clearly focused on disease and rehabilitation-related issues rather than on the general needs of older people, many of whom are healthy and active albeit prone to frailty. So, in the main, the focus on the needs of the ageing population, and to some extent on the needs of people affected by

mild and modest disabilities, was new for EPSRC and for universities. There had been no significant programmes concerned with the relationship of the disabled or older person with the built environment, covering the design and redesign of the home, public access buildings, streets, transport systems, other infrastructure, consumer products, packaging and the like.

Since 1997 the research councils' investment in ageing research has developed, as has the nature of their programmes. Initially EPSRC was the only research council supporting multidisciplinary, collaborative, user-engaged research. The other research councils pursued single-disciplinary programmes, which in some cases were strongly orientated to serving academic needs, with at best tentative links to users and beneficiaries. More recently, however, the other research councils have, to varying degrees, come to adopt much of the EPSRC perspective; multidisciplinarity, engagement with professionals, and recognising the expertise of users and beneficiaries, are seen as essential. Looking ahead, strong growth in funding is expected, with ageing being prioritised by government in its research spending plans for 2008 to 2012.

HOW DOES A NEW RESEARCH COMMUNITY GAIN AN IDENTITY?

Initial Funding

Rather like in the early days of the SPP, those securing awards from EQUAL were mostly established academics, in this case with a strong interest in the way the built environment, everyday products and, more generally, technology could be designed to support older and disabled people. Some had research experience in the area through either their own initiative or very modest funding, but that experience was not necessarily extensive. However, just as those involved with the SPP were well acquainted with the issues which they wished to research and with industry, so those in this new area knew the field well and were well connected to organisations concerned with older and disabled people. So, when the opportunity to secure funding came along, they were well placed to offer credible and interesting proposals. Another similarity with the SPP was that in the main those who secured support also employed young research assistants to undertake much of their research.

It did not take long for the SPP to become established. So too, by 2001, after three well-supported calls for proposals, ageing was accepted as more than a passing interest of EPSRC. Also, as had been the case with the SPP, after three years there was a strong expectation that the period of special protection for this new area would soon be over. In the future, those wanting to work in the area would have to compete against those operating in better established areas and, for example, gain support through the EPSRC responsive mode system.

Initial Meetings

In the first few years of EQUAL, EPSRC had funded meetings for award holders and their teams who, because of the innovative nature of the area, tended to be rather isolated in their institutions. These meetings had several purposes, such as information exchange, building an embryonic community, and encouraging those who had completed their funded projects to remain in the area through building networks with others with whom they might bid for further funding.

It was through similar meetings organised by the SPP that eventually the leadership emerged to propose and then to set up ARCOM. An important motivating factor for this was to establish a forum which would nurture and develop newcomers to construction management, including award holders but especially research assistants. At the time the only relevant organisation was CIB, in that it had Working Commissions in the fields of management and economics. However, it had no brief for the development of the skills of new researchers, and because its activities were largely overseas it was not accessible to many of those involved with the SPP.

The emerging ageing research community faced a similar set of issues, in the sense that although there were several learned and professional bodies in the UK concerned with ageing research, none of them had an interest in design and engineering, or in the development of individual researchers. The international scene was even more remote than it was for those with an interest in construction management.

Independent Organisations

However, by the early 2000s, the attraction of establishing a new scientific body in ageing was much less than it had been for construction management in the early 1980s. Individual academics, especially those in early career, had less discretionary time or funds to devote to relatively altruistic activities for which, at best, the return would be in the long term. So, in this case, whilst there was enthusiasm to keep the community together, activities towards this end had to be justified in terms of not just the contribution to the common good but also the direct benefit to those individuals closely involved with developing the community and to their institutions.

Perhaps reflecting the demands made by this different environment, for some time EPSRC had encouraged the development of small groups and embryonic communities through providing funding for networks. The usual aim of these networks was to develop significant collaborative research proposals, although they could be in support of other activities. For nearly ten years this network support has underpinned the development of the ageing research community. There have been three such networks, The EQUAL Network, 2001-2004; SPARC, 2005-2008 (funded jointly by EPSRC and BBSRC); and, KT-EQUAL, 2009-2012, with strong continuity between each of them (SPARC, 2008).

As a consequence the development of the ageing research community has been determined by whatever has been included in the proposals for network funding which have been submitted to EPSRC. Although these proposals have sought to reflect the needs and wishes of the community, to be prospective and creative, they have also reflected EPSRC priorities. This is a very different approach; one which does not lend itself easily to the organic development of the community or to encouraging and sharing leadership of the community.

Structures

ARCOM has been structured around a membership and committee with elected officers, undertaking designated roles working to an established constitution, and pursuing a range of activities agreed by the committee and members. In essence, ARCOM has been self-regulating and self-perpetuating.

The series of EPSRC-funded networks available to design and engineering ageing and disability-related academic research community in the UK have constituted the corresponding vehicle for providing continuity, identity and development. These have been structured by predetermined plans expressed in proposals for the activities of a

director or directors, support staff and advisory committees. Despite some discretion, each network could not accommodate major developments outside of those envisaged in the proposals, although these could be the subject of subsequent proposals. Finally, although the networks may have reflected the needs and desires of their members, there is no sense that these were activities which could be managed and sustained by them. The dependence on EPSRC has been too great.

The difference in organisational philosophy between the two communities is clear. ARCOM has an organic organisation, emphasising teamwork, strong co-ordination between key members, subtle links to the community, and a leadership which although evolving is conditioned through a long familiarity with ARCOM and its ideals. Its organisation very much reflects the dominant research environment of the 1980s, driven by the energy which comes from the voyage of discovery in a new area.

On the other hand, although close to and responsive to the ageing research community, the series of EPSRC funded networks has been structured around explicit expectations, although open to some interpretation and modification, a predetermined and fixed leadership and limited team work. This might fit the mould of a bureaucracy or a mechanistic form of organisation. Whatever the form it lacks those ingredients essential to an independent and evolving existence. Significantly the structure mirrors the current research environment, which places a premium on, for example, specified outcomes delivered according to predetermined milestones and on the track record of award holders. Nevertheless, it is just as well that EPSRC is able to support the networks, as it is unlikely that there would be something else in their place.

HOW TO ENSURE CONTINUITY?

Both the construction management and ageing research communities have been faced by the need to ensure continuity and growth through the development of the next generation of research leaders from a cohort of largely young research assistants. This is not unusual in the research world. The typical career path is that, sooner or later, most research assistants become lecturers, sometimes after an extended period as research fellows. With the experience gained as a researcher they find themselves in a good position to write research proposals and secure awards. In due course they become bona-fide investigators and take positions of leadership in the community.

Positions

For construction management, this process has taken longer than might have been expected in the 1980s. Despite the large number of universities and polytechnics (re-designated universities in 1992) involved with the SPP very few of these are still active. This reflects the changing fortunes of building, surveying and construction management courses in universities even more than the funding for research, of government and institutional policies, and of the career progression of some key researchers. Some of the former research assistants involved with the SPP now hold significant positions in universities, but probably there are fewer academics and researchers involved with the area now than 25 years ago. Presently, there are a few large centres and some small groups, but judging by returns made to the last two RAEs, the amount of construction management research taking place in the UK has not grown in recent years, although the number of PhD students may have, but these are largely from overseas. However, the situation has stabilised. There are better career paths for researchers and the funding mechanisms used by EPSRC have enabled the larger centres to plan ahead.

Table 1: Ageing and disability-related networks supported by EPSRC

| Network | Activities | Funding | Outputs |
|-------------------------------------|---|---------------------------------|---|
| Meetings for an embryonic community | Meetings for EQUAL award holders and their teams | £6k EPSRC | Meetings - 2 Reports |
| EQUAL Research Network 2001-4 | Workshops for all stakeholders in ageing and disability Advocacy to policy makers | £60k EPSRC | Workshops - 12 Website Reports Papers Presentations Policy representation |
| SPARC 2005-8 | Workshops for all stakeholders in ageing Advocacy to policy makers Pump-priming awards to newcomers to ageing research and other support (£1.25k) | £1.75k EPSRC and BBSRC | Workshops - 48 Awards -34 Executive summaries Audio interviews Videos Flyers Brochures Website Papers Presentations Funding information New funding streams International activities Policy representation |
| KT-EQUAL 2009-12 | Workshops for all stakeholders in ageing and disability Advocacy to policy makers Active engagement with practitioners | £1.45k EPSRC | The intention is that this should add to the range of outputs established by SPARC |

Significant funding for ageing research has not been around long enough to be able to judge the development of the area on a large scale. Even so the growth of some centres is clear although some have already started to decline because of the loss of key staff, often through retirement. For ageing research there are also issues relating, firstly, to the difficulties for inexperienced academic staff when seeking and securing funding for ageing research coupled with the considerable pressure on them to secure research funding. This leads them into other fields. Secondly, there are problems which arise from the loss of leadership and direction experienced by some junior staff when visionary senior colleagues retire or move-on in their careers. The result has been that some centres have emerged, although few have critical mass, and there are a handful of smaller groups. However, it is too soon to judge whether the situation will stabilise, whether the loss of the early inspirational leaders in the area will be followed by a new generation of similarly inspiring researchers.

So, just as at times, ARCOM faced some uncertainties about its future membership numbers and, to some extent, leadership of the discipline, so too there are issues to be faced by the ageing research community. These are, however, more extreme because the dependence on EPSRC network grants does not encourage succession planning in the way that ARCOM's constitution does.

THE DOMINANT FEW?

The role of a few dominant centres and a handful of very experienced individuals in the development of ARCOM has always been of interest. A prime mission of ARCOM was to support the development of many newcomers to construction management research rather than to provide an alternative platform to CIB for the most experienced few operating in the area. As such, the attraction of ARCOM to the latter might have been rather limited. Although they could contribute to the development of a new generation of researchers, which in itself could be rewarding, the other benefits of being involved could be seen as limited. This seems to be reflected in the proceedings of early ARCOM events. Although there were some notable exceptions, many of the key players in the field were not very involved.

A not dissimilar situation has arisen in ageing research, with relatively few of the most experienced in the field taking the lead in developing the community. To some extent this is because of the way EPSRC networks are funded, for example they have a designated director and support staff, but it is also to do with a combination of the pressures on time and accountability for those who do not have access to the funding. So here too there have been issues of getting key players to share their experience and engage with the broader community.

BROADENING THE BASE

From its inception ARCOM sought to engage with industry and the professions and to recruit members from industry. It was not overly successful in doing this. There were some industry members but largely those who were registered for research degrees, and there were some notable industrialists who took a keen interest and encouraged ARCOM. The academia - industry divide was considerable, even though much construction management research was undertaken in conjunction with industry.

For, ageing research, also carried out with key stakeholders, it has been easier to ensure a closer interface between researchers and the users and beneficiaries of research. This has been due to a dual focus on developing the academic community on two dimensions - reflecting the needs of academics and reflecting those of other stakeholders. This has led to a two level relationship with other stakeholders. Firstly, there has been the involvement of advisors drawn from and representing the interests of the users and beneficiaries of ageing research including professionals in health, social and housing services, charities, government, industry as well as older people and their carers. Secondly, there has been very regular engagement with these stakeholder groups through events showcasing the latest research and encouraging their feedback and involvement in the research process. In turn this has led to a significant stakeholder influence on the community and its networks, although it is an influence which the academic can too easily choose to ignore

RETAINING THE PROBLEM-SOLVING END-USER FOCUS

Even though there is broad base of support for ageing research, there are many factors which mitigate the strong end-user focus which EPSRC and the networks have

endeavoured to encourage. Despite many statements, for example, by universities about their promotion criteria for academic staff, from those responsible for shaping the RAE, and by government about science and society, relationships with industry and with beneficiaries and end-users of research are secondary to traditional academic outputs. These include securing 'blue-chip' funding from research councils, publications in top refereed journals which reflect the intellectualisation of a particular area of research, and presence on international platforms. These remain the gold-standard by which researchers are judged.

Whilst, for both construction management and ageing research, EPSRC has encouraged applied research, at the same time that research has tended to be reported and assessed in a traditional academic fashion. Journal publications loom large in this process.

Journals

Faced with few suitable academic journals for its work, the construction management community quickly inaugurated several new journals. Construction Management and Economics has stood the test of time. Construction Papers another high quality journal achieved two volumes. Others came and disappeared. Sometime later, Engineering, Construction and Architectural Management was established, and has also survived. Although highly regarded by those in the field, in recent years the development of some journals may have suffered from not having achieved recognition by the Science Citation Index. This has led some researchers to publish in the very journals which twenty years ago were considered inappropriate for construction management. However, by now the researchers have the background, skills and confidence to be able to achieve this and editorial policies have changed.

With design and engineering ageing-related research there is a similar situation. There are no appropriate journals. However, although some have mooted the need for a special journal and have discussed this with publishers, it is not a serious option. The time scales, effort required and risks are too great. So a virtue has been made out of an argument which asserts that it is better to get this new type of research into established mainstream journals. The reality is that very few of the proponents of this new type of research have the background, skills or confidence to achieve this, and so many turn to journals in their base discipline and do not report the full richness of their multidisciplinary user-engaged endeavours.

Institutionalisation

Underlying the maturing of construction management research has been the steady development of its theoretical and methodological base, a process of intellectualisation which is apparent in many new areas of scholarship. There are some important comparisons here with the development of management research since the advent of the business schools, and the regular eruption of contempt for this process by prominent business people. For many areas of ageing research the intellectual base is already well established, and for some areas this has seriously constrained the development of a multidisciplinary, user-concerned perspective. For design and engineering ageing research this is not true, although the influence of, say, the need for individual researchers to achieve career progression, is leading them along the path witnessed earlier for construction management research, a desire to set their work in the context of established disciplines, theories and perspectives.

One of the refreshing aspects of the early days of construction management research was the cavalier way in which leading researchers selected, mixed and matched their theories and methods to suit their purposes. This wasn't on the basis of ignorance, but an implicit appreciation of the complexity and multidisciplinary nature of construction processes. Like the project manager concerned with problem solving and delivery, the rules of research were made and broken to suit the challenge and situation in hand. These days, few dare be so bold: academic mavericks are few and far between. Some colour has been lost from the area. The same goes for ageing research, there is a predominant concern for means over ends, except perhaps when pure designers appear on the scene.

REFLECTIONS ON ARCOM

This paper has presented the development of a new community of researchers, so as to provide an opportunity to reflect on the development of an established community represented by ARCOM. Many questions could be asked. For example: Although undoubtedly a child of the times, could ARCOM be established in today's academic environment? If so, what would it look like? Are there areas where ARCOM has clearly failed its community? What could other communities learn from ARCOM?

In response, the major question is the extent to which, given the current highly pressured environment of research in the UK, academics and researchers would be willing to invest significant time and effort in establishing an organisation to oversee the development of a new community?

This would require both personal commitment and institutional commitment in terms of recognising both the time required and the funding needed by those individuals seeking to play an active part. A pessimistic response would be to say that the time scales and payback would be too long, that whilst some individuals might be in a position to take the lead, there would not be a critical mass of support. Of course, the degree of attractiveness would change if a third party picked up the tab, but as we have seen with ageing research, that has not led to a commitment to the continued development of the community but, rather, possibly to an unfortunate dependency on EPSRC. Reinforcing this view, is that in order to progress there would need to be significant support from a good number of the leading players in the area, yet as has been shown for both communities, this involvement might be difficult to secure. Possibly this viewpoint is too concerned with the question of 'who pays' and individual benefit. Hopefully altruism and survival in the academic world can still co-exist.

Picking holes in the achievements of ARCOM, certainly over the last decade, is surprisingly difficult. ARCOM has been very careful to maintain its well-established operations and to gently expand them, always keeping an eye on developing a new generation of researchers. Importantly this is where it has developed a distinctive niche. It has co-existed with other organisations, hasn't challenged them for the high ground, and has stuck to serving its community in an unpretentious, well-tempered, even somewhat modest manner. Could it have done more as a catalyst for development and change, for example, securing significant funding streams to benefit its activities and those of its members? Given today's environment, the answer is probably yes. Yet in doing so it would have created potential conflicts of ownership, weakened leadership and created differentials in the nature of the involvement of its members. Maybe it is as well that it has not had to use those devices which currently are frequently deployed for developing new communities.

Viewing ARCOM from the outside, the attractiveness of what it has achieved is clear. Other communities, will admire its self-governance, the steady succession of officers and the way this contributes to their experience. They will recognise its achievements of longevity, steadiness and standing, not just in the eyes of its members but internationally. They will envy ARCOM's position as being an important part of the infrastructure of construction management research, that it is more than just part of the woodwork, but a vital vehicle for the maintenance and development of its area of interest. The difficulty is in being able to say how to replicate its success given today's environment. Yet, the lessons are clear: the benefits which come from being able to establish and maintain an organisation to nurture the community independent of the bodies which fund the work undertaken by the community are immense.

CONCLUSIONS

There is much to be celebrated. For twenty five years ARCOM has played a key role in keeping together and developing the construction management community and contributing to the international leadership of the UK in the area. Many have contributed to this success, some unsung heroes from the formative years, through to more prominent figures of recent years. Their contribution should be recognised and applauded. These days it would be extremely difficult to establish an ARCOM-like organisation. Yet, over the last ten years, the reflections of the author of this paper on the development of ARCOM have played no small role in informing and inspiring the development of a quite different venture, in the field of ageing.

It is essential that ARCOM is encouraged to continue to develop as well as to preserve its existing culture and identity. Construction management research and researchers would be much worse off without it!

ACKNOWLEDGMENT

The author wishes to thank the referees of this paper for their helpful comments.

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