

## Recovering from disaster - the loss of Edinburgh's AI Library

*The world-renowned Artificial Intelligence Library at the University of Edinburgh was destroyed by fire in December 2002. Richard Battersby details how they recovered from the disaster.*

During the night of Saturday 7 December 2002 the sky of central Edinburgh was lit up by a massive fire which appeared to be centred on a building occupied by part of the university's School of Informatics. The Scotsman showed a dramatic photograph of fire fighters training their hoses on to the building with the dome of the university's Old College behind – somewhat reminiscent of the iconic photograph of St Paul's in the Second World War.

Millions of pounds worth of damage was caused. Much of the Informatics building was destroyed, and other parts were badly smoke damaged. Fortunately, there was no loss of life. The fire may have begun in a fuse box somewhere in the complex of buildings, although the exact cause may never be known.

The Artificial Intelligence Library which was destroyed was on the 4th floor of the building, and there were several stores located elsewhere. The library's origins dated back to the mid-1960s, when the university's long association with artificial intelligence and related subjects began to develop. It was re-established in South Bridge in 1985 and, although the space occupied was small, the library contained a world-renowned collection, encompassing the intellectual output of the School of Informatics and its many predecessors.

In the words of Professor Alan Bundy, a distinguished and long-standing member of the school, 'Edinburgh was one of the first four international centres for AI research and the only one outside the US. Its library housed a unique and historic collection of AI publications, many dating from the early years of the field in the 1960s.'

Administratively, the library was part of the School of Informatics. Earlier in the year, the school had decided to close its smaller AI library, in the Forrest Hill building nearby, and to integrate the stock into the South Bridge library. This was undertaken just four months before the fire. However, some of the work on disposing of archival copies of internal research reports was still to be completed, and this material was fortunately located elsewhere in the building and, as a result, was saved.

### **The first three weeks**

The loss of the library was a huge blow for all concerned, particularly for Olga Franks, who had run it since its opening. In the immediate aftermath of the fire, she was interviewed by the BBC and said 'I feel simply desperate. I was one of the original librarians in the department and I saw it grow from the size of a cupboard into an immense library.'

Urgent action had to be taken to re-establish some form of library service ready for the new term in January. Although the University Library has a disaster plan, the scale of this fire far exceeded anything envisaged and it was unfortunately of limited use. On the Monday morning, the then Acting Librarian, Sheila Cannell, and I met with the Head of School, several of his colleagues and several people from the loss assessors to agree on an initial way forward. The first step was to make an extract of all AI Library records from the University Library's database – fortunately all the material was recorded in the catalogue.

Over the course of the next few days a number of steps were taken, including:

- setting up a page on the library's website, Library Online, telling users about the temporary

service arrangements

- arranging for Olga Franks to have a base in the Main Library in George Square
- setting up shelving in the Main Library to accommodate AI stock
- making arrangements so that users could request free inter-library loans for any item lost in the fire
- arranging for the AI Library records to be amended in the library catalogue to indicate those items that were 'missing' and those that had been recovered
- making arrangements with other local libraries (e.g. National Library of Scotland and Heriot Watt University) for our users to have access.

The Librarian at the University of Sussex, Deborah Shorley, gave us valuable advice – based on the flood that her institution had suffered in October 2000 (Shorley, 2004).

Meanwhile, the School of Informatics launched an appeal and contacted former students. Immediately Olga Franks began to receive offers of books, theses and reports, together with messages of sympathy from home and abroad.

Several library staff were given permission to enter part of the building to retrieve material which had not been destroyed – PhD theses and older research reports from other institutions – and to move them to the Main Library. The reports were in smoke-damaged pamphlet boxes and had to be put into new ones. The re-boxing exercise was completed by Christmas. Several filing cabinets containing original AI Department research reports were also moved to the Main Library.

The university decided that the school would be re-housed in its Appleton Tower, located almost half-way between the site of the fire and the Main Library. This meant moving around 100 open-access PCs to the Main Library during the Christmas vacation and early in the New Year. During the Easter vacation a further batch was moved to the Erskine Medical Library in order to spread the load of such equipment across the central area of the university.

Many staff in the University Library had to abandon their normal work in order to help, and it was very encouraging to see such a team spirit. This was replicated in other areas of the university.

### **The next six months**

An information sheet was prepared for library staff to brief them on all aspects of the service provision. Work began immediately to determine exactly how much stock had been destroyed. The following picture emerged:

- Books: around 5,750 books were lost. Some 400 items were on loan at the time of the fire and, over a period of several months, some 250 were returned. The remaining 150 were lost in the fire, having been in offices throughout the building
- Conference proceedings: some 1,400 UK and overseas items were destroyed
- Journals: there were 61 current subscriptions and 47 dead titles. Most of the journal holdings began in the 1980s, but several dated back to the 1970s. All were lost
- University of Edinburgh theses and dissertations: some 1,125 PhD theses, MSc dissertations and undergraduate dissertations were destroyed. Some PhD theses and unbound copies of MSc dissertations belonging to the school survived as they were shelved elsewhere in the building
- University of Edinburgh research reports: around 4,500 research reports were lost. As with the theses, they represented a significant loss of the intellectual output of the school over four decades. Some archival material from the school was retrieved from a store located away from the library itself
- Other research reports: around 28,000 items from some 100 universities and other research institutions around the world were lost. Around 1,500 reports were saved from an adjacent store.

The loss assessors gave us the go-ahead to start buying books, and these were charged to a special fund for all AI fire expenditure. Initially, it appeared that we would need to ask before ordering each and every book. However, we were soon given permission by the loss assessors to purchase copies of all books which had been acquired over the past 2-3 years and, later, other material to support the immediate needs of the school. We found it difficult at times to make the loss assessors understand that we had to replace specific books, rather than any books in the subject area. We were then allowed to appoint a part-time library assistant to order and process this material.

In all, around 1,000 books were ordered, although many were found to be out of print. The AI collection in the Main Library gradually began to take shape. We were also allowed to make arrangements for setting up access to some 20 electronic journals.

### **Donated material**

A lot of time was spent dealing with donated material following the school's appeal. A large number of books were received in this way and were subsequently added to stock. In addition, offers of theses/dissertations were made, and these were accepted, more often than not, electronically. Elsevier donated a complete run of its journal Artificial Intelligence, and Springer made a large donation of books.

A senior member of staff at Elsevier who was an Edinburgh University graduate contacted us, having read about the fire, and suggested we approach the newly established Elsevier Foundation for funding to undertake the digitisation of AI material. A bid was duly submitted.

By the end of July 2003 there were some 2,000 books and around 1,500 salvaged research reports in the AI collection in the Main Library. Throughout this period the AI Library web pages were updated to reflect the changing service provision. There were several meetings with staff from the School of Informatics to discuss priorities for reinstating the lost stock once insurance money was received.

The university meanwhile asked the Director of University Collections, based in the library, to undertake a review of all 'vulnerable' collections. The subsequent report listed a wide range of such collections across the university and made many recommendations, and these are now being addressed. It could be said that the AI fire gave the university a 'wake-up call'.

### **Insurance claim**

A start was made on the insurance claim, and I was asked to co-ordinate this by the Acting Librarian. The claim for the rest of the building was to be handled by the School of Informatics. Regrettably, my library training failed to include any lectures on 'How to deal with insurance claims'. We were very glad to have Deborah Shorley's advice.

There were three elements to the claim: shelving, furniture, equipment; staffing; and collections.

The first was straightforward. The University Library's Systems staff had details of the PCs destroyed. The university's Furniture Office provided costs of the small number of tables, chairs, filing cabinets etc, while the replacement cost of the shelving was calculated from a library supplier's catalogue (the original supplier no longer existed).

Calculating staff costs was more difficult. In the end, it was decided to claim for a half-time professional librarian and several full-time library assistants on different grades, all for a year. Their activities would include the ordering, cataloguing, processing and binding of replacement stock, and working with the School of Informatics to ensure that its library and information resource needs were being met. The staff costs of scanning the university theses and reports were included in the

respective sections of the claim.

Most of the time, however, was spent on the collections. If the library had only held books and journals, this would have been much easier, but a large proportion of the collection consisted of research reports.

From the outset we decided that the emphasis would be on restoring the 'knowledge base' in the most appropriate way possible. However, this presented a challenge in compiling the claim. The advice from the university was to claim for the loss of the physical stock assuming replacement in print.

The section on the collections was arranged according to the different material categories:

- Books: the claim was for 4,676 books. As a large number of the books were no longer in print, we had to decide on an average cost. We excluded from the claim those books which the loss assessors had given us the go-ahead to replace, as the cost of these would be claimed separately by the university. We checked the average prices of academic books produced by Lisu (Library and Information Statistics Unit at Loughborough University) and used its Computer Science figures. We checked the average price of the books recently re-ordered, we examined the price of all books purchased for the AI Library in the period August 1999 to July 2002, and we looked at prices of some 4,000 AI books in Abebooks.com
- Conference proceedings: we took a sample of the proceedings, checked their current prices and calculated an average cost per item
- Journals: we asked SwetsBlackwell's Back Sets Department to provide us with a cost for replacing in print the 108 titles. We supplied them with an Excel file, and they used current market prices and, in the case of older volumes, calculated a price based on their knowledge of the market. We then added an estimated cost of binding using data from our own bindery
- University of Edinburgh theses: we estimated the cost of using a book scanner to copy the archival copies of the PhD theses held by the University Library
- University of Edinburgh research reports: here again, we estimated the cost of scanning the reports held in the National Library of Scotland and other locations
- Other research reports: this proved a particularly difficult category of material. We contacted five large research institutions and also used information from the MIT website to calculate an average cost per item.

### **Avoid using jargon**

The elements noted above were summarised in the claim. All the calculations and support data were provided in an appendix. In writing the claim, care was taken throughout to avoid using jargon and to explain as clearly as possible the different material types. We noted that VAT is not payable on printed books and journals. We checked several points with the loss assessors.

The claim was finally submitted to the university's Finance Department at the end of May, nearly six months after the fire. In retrospect, I think it would have been better to have worked full-time on the claim over a far shorter period of time, but given other pressures this was simply not an option.

We were pleased to receive funding from the Elsevier Foundation in response to our bid and decided to use it to create a temporary post of Digital Library Officer, whose role would be the development of an Informatics portal. The intention was to create a test portal and a core informatics collection comprising library resources, research activities such as pre-prints, reports, theses, and course resources, as well as recommended external resources. This work was started in January 2004 and we hope to be able to continue the project in conjunction with the library's developing Collections Gateway.

In autumn 2003, we were able to purchase Elsevier's Computer Science back-file, which included a number of the titles which had been held in the AI Library.

### **Online replacement**

In the claim we had identified the costs of the collection lost on the basis of replacement in print, although this would, in reality, not be possible. We were asked by the insurers to calculate the costs of replacing electronically some of the lost material, and in July 2003 we submitted a supplementary paper detailing the position for the different material types:

- Books and conference proceedings: as most would not be available online, the only option was to replace in print
- Journals: in some cases we already had free online access to a number of years linked to our print subscriptions, but with other titles extra payment would be required. In many cases only a limited number of years were available online. It was clear that we would still have to buy large numbers of volumes in print
- University of Edinburgh theses and research reports: we examined the costs of making digital copies. This would avoid the binding and printing costs, but there would be extra staff costs involved with creating/editing the metadata and PDF creation, and server and file storage costs. Interestingly, the overall costs turned out to be about the same as for the print replacement option
- Other research reports: given the number of reports involved, it would have taken a long time to check the online availability of each report. From our initial checking, however, it was clear that some of the more recent reports were freely available online via institutions' own websites. It would therefore be possible to create links from the University Library's catalogue direct to the online version. However, there would be staff costs involved in creating the links. Those reports not available online would still need to be replaced by a paper copy, as we would not be permitted to digitise other institutions' reports for copyright reasons. We concluded that the overall costs of the print option and the online option would probably be about the same.

In late August 2003, Sheila Cannell and I met the loss assessors to discuss the claim. The insurers were having difficulty, not surprisingly, in understanding the complexities of the online replacement option, particularly with regard to electronic journals and the digitisation of the research reports.

The insurers had expressed concern about what they saw as the 'high' staff costs in the claim. A further supplementary paper was therefore submitted in early September 2003, explaining the wide range of activities involved and the necessity of appointing additional staff on various grades. It was pointed out that it was not an option to offer overtime to existing staff because of the nature of the tasks and the higher costs involved.

In November 2003, the loss assessors requested a meeting with me. They wanted to go through each section of the claim in detail, asked for further information on how we had calculated the number of items which had been lost, and wanted to see how we would actually undertake the digitisation of the theses and reports.

I was contacted again early in 2004 and then again several months later. I was somewhat surprised by these requests, as the claim had been submitted back in May 2003, with two supplementary documents having been provided later. However, I supplied the data as quickly as I could, along with supporting documentation.

The AI collection remained in a separate location, with the books arranged by the Association for Computing Machinery classification scheme. By early 2004, it was felt that the time had come to fully integrate it into the Main Library's collections and so, during the summer vacation, the books were re-classified to Library of Congress and re-shelved. Soon afterwards, the journal collection

was classified and similarly integrated.

At the time of writing (October 2004), we are waiting for confirmation that the claim has been settled, and we are starting to consider how to use the funding most effectively.

The destruction of the AI Library was a major loss to its users and to all the library staff who had worked hard over 17 years to build up its collections and services. For the university it was a cruel reminder of the vulnerability of many of its collections, and steps are now being taken to address the issues raised. For the University Library, the challenge now is to use the funding from the insurance claim to develop new and exciting ways of providing services to the Informatics community. The gaping hole off South Bridge reminds all of us of the devastating fire, an event which none of us in the university hope we will witness again.

### **Reference**

Shorley, Deborah. 2004. 'Disaster planning: "in the end you just cope".' *Library + Information Update*, Vol. 2 (3), 2004, pp. 46-47; and Robert Howes (on compiling their claim), in *Aslib Proceedings*, Vol. 5 (3), 2003, pp. 181-187.

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