



Digital versus Conventional photography:  
**The Royal College of Art 'Slide Record of Student Work in the Show'  
Digitisation Project**

**WHAT IS THE RCA SLIDE RECORD OF STUDENT WORK IN THE SHOW?**

The RCA's 'Slide Record of Student Work in the Show' is a comprehensive visual record, going back twenty-five years, of graduating students work in the annual show, which takes place in May/June each year. The Slide Record is held in the Slide Collection in the RCA Library, a division of the Information and Learning Services (ILS) department. The Slide Collection is staffed by the Slide Curator, responsible for its overall administration, and the Slide Technician/Photographer, whose responsibilities include photographing the Show work of students.

Access to the Slide Record by non-members of the College is by appointment only. Most visitors are prospective students who wish to look at the work of the College prior to making a formal application. Other visits include those arranged through course staff. Recently, for instance, they have included a ceramics manufacturer wishing to commission work and a picture researcher for a monthly art magazine. Images from the Slide Record are used for promotional purposes by the Media Relations department. They appear in the College Prospectus, the Annual Report and other printed publications and on the College's web site. However, because of its limitations in terms of access and visibility, the Slide Record's potential as a resource, e.g. for research purposes, is largely unrealised.

Over the last twenty years, the Slide Record has been added to annually on a systematic basis. During the course of the four/five weeks that is the final year show, every student's work, with certain exceptions<sup>1</sup>, is photographed on 35mm-slide film, glass mounted, captioned and added to the Slide Record.

Between 1,000 and 2,000 images are added each year. The work of cataloguing and captioning the slides is carried out over the summer vacation, so that new students can be shown the work of the previous year's graduates when they are given their initial induction tours.

The number of slides held in Slide Record now approaches 30,000. For some departments, e.g. Painting and Ceramics & Glass, the Slide Record includes images of work going back to the 1960s and 1970s, but there are usually gaps in coverage the further back in time the Slide Record goes. For the past five years a database with information recording the student and work details

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<sup>1</sup> The main exceptions to this have been the work of the RCA/V&A Conservation course, as these are museum objects and not the original creations of the student. Audio-visual work, such as that produced by Animation, is not recorded, but a video recording is lodged with the Library, for viewing by appointment. Students who are awarded a Degree by Thesis also have their work available to researchers in the RCA Library (and via inter-library loan). A slide record is also kept of the Curating Contemporary Art course's annual exhibition, but the copyright situation on these images has yet to be clarified.

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has been kept, but prior to this only typewritten labels attached to each slide identify the images.

### **WHY DIGITISE?**

A range of linked factors together provided the overall impetus for changing the method of recording students work in the Show from a conventional photographic process to a digital one.

#### **Promotion**

Images of students' work in the Shows are used extensively in College Publications and on the College's web site. Making and providing physical copies of slides is both laborious and time consuming. Digital images could be burnt to CDs or simply attached to emails. A catalogue of images available on the College network could easily be accessed and searched by the College Publications Manager. Similarly, a set of images available on the web site could easily be accessed and downloaded (via a password system) by selected members of the Press.

#### **Access**

The Slide Record – a physical collection of slides – is of course accessible and viewable only to someone actually visiting it. We wanted to achieve a position where virtual access was possible. A collection of digitised images would be accessible and viewable, not just by our own students and staff via the College network, but also, at a future stage, by external users – students and staff at other institutions, researchers, the press – via our web site.

#### **Preservation**

All photographic slides, even those stored under perfect conditions have a tendency to deteriorate over time, suffer loss (the Slide Record is "Reference Only" to try to prevent such loss – duplicates are made on request) or damage and are vulnerable to a disaster (e.g. a fire). One perceived advantage of digitisation was ensuring, through the associated data back-up arrangements, the secure preservation of what for many students is the only existing image record of their work at the College.

#### **Research**

After leaving the RCA many of its students go on to become leading and celebrated practitioners in their respective fields. Former RCA students, for instance, include artists Barbara Hepworth, Henry Moore, Bridget Riley, David Hockney and, more recently, YBA's Jake and Dinos Chapman, Tracey Emin and Chris Ofili; designers James Dyson, Zandra Rhodes and Ozzie Clark; and film director Ridley Scott.

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In this respect the Slide Record represents a unique resource, liable to possess a research value to the Higher Education Art and Design research community and beyond. Making these images and associated data available digitally via the RCA web site would provide instant access to any such researcher with an Internet connection.

### **RESEARCH, PLANNING and IMPLEMENTATION**

Before planning the project we undertook some preliminary research. This included seeking advice from such organisations as the Technical Advisory Service for Images (TASI)<sup>2</sup>, the Arts & Humanities Data Service (AHDS)<sup>3</sup>, the Visual Arts Data Service (VADS)<sup>4</sup> and the Higher Education Digitisation Service (HEDS)<sup>5</sup>.

We also visited projects, for example the Tate Gallery 'Insight' digitisation project and the Central St. Martins Museum and Study Collection digitisation project for the JISC Image Digitisation Initiative (JIDI).

The Slide Curator attended various conferences and seminars, including a workshop at the British Film Institute – An introduction to Still & Moving Image Metadata for the Visual & Performing Arts (2000), a seminar on cataloguing and indexing of images – Library Association (2000), the annual Visual Resources Association conference in Chicago (2001), a TASI workshop – Setting up an Image Database: cataloguing and metadata (2001), an AHDS Digitisation Workshop – Kings College (2002), the JISC International Digital Image Symposium (2002), a HEDS Conference 'Developing the Digital Collection' (2003) and an AHDS/JISC Copyright and Digitisation Workshop (2003).

The Head of Information and Learning Services and the Slide Curator jointly attended a HEDS course at British Library in June 2000.

Internally we consulted a range of staff in Academic departments, Computing Services and the External Relations department.

All of this initial research enabled us to plan the project with a degree of foresight.

There were always two aspects to the digitisation of the Slide Record:

- implementation of digitisation from a given point onwards – photographing the Show digitally and cataloguing and storing the resultant images;

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<sup>2</sup> <http://www.tasi.ac.uk>

<sup>3</sup> <http://www.ahds.ac.uk>

<sup>4</sup> <http://vads.ahds.ac.uk>

<sup>5</sup> <http://www.heds.herts.ac.uk>

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- the retrospective process – converting the existing collection of 30,000 conventional photographic slides to digital images, cataloguing and storing them.

Prior to the current initiative there had been a number of earlier proposals, including some consideration of a bid for lottery funding in 1998 and, in 1999, an unsuccessful bid to the RSLP (Digitalisation of the Royal College of Art Degree Show Record). The costs outlined in these proposals chiefly related to the retrospective conversion of the existing slide collection to digital images.

The current project focussed on implementing the digitisation process from this point on. Project costs in terms of equipment and software was determined and a bid for “internal” funding was made to the College’s Planning and Resources Committee. This bid included the costs of a suitable Digital Assets Management System (DAMS).

Possible changes in staff roles, training requirements and the acquisition of new skills and specialist technical support were all factors that had to be considered.

Significant issues we had to address included copyright and IPR, future collection management, quality and technology issues.

Retrospective digitisation of the existing Slide Record was addressed under a bid to the AHRB Resource Enhancement Scheme, in May 2003 (Royal College of Art Design Archive). This bid covered a range of College archives and resources. The outcome will be known in September.

As with many changes, we also had to take into account, that for (perhaps quite a lengthy) transitional period, there would still be a need for some of the processes we intended to replace.

A good example of this is the requirement for physical slides. While we intended making digital images available (via a DAMS) on the College Intranet, we knew that not all of our users would be conversant or comfortable with their use (e.g. downloading and using them in PowerPoint presentations, for instance). There would continue to be a demand for slides, which we needed to satisfy. Therefore our bid for funding needed to include the cost of a facility to make slides from digital sources.

In the event, upon receipt of the funding, we decided to match fund with the College Photography Department, who themselves wished to acquire a (multi-format) digital slide writing facility. We negotiated an in-house slide making service from them as part of this arrangement.

### **Project Resourcing**

The bid for funding was made in March 2002 to the College’s Planning and Resources. The costs identified were:

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Server version of DAMS	£5,000
Digital Camera	£3,500
Ancillary Camera equipment (memory storage cards etc.)	£1,250
Slide Scanner (35mm)	£4,000
G4 Macintosh Computer	£3,000

### **Project Staffing**

Staff involved in the Project were:

Peter Hassell (Head of Information and Learning Services) - Project Sponsor

Jan Murton (Slide Curator) – Project Manager

Dominic Sweeny (Slide Technician/Photographer)

Nick Frayling - Technical advisor on Extensis Portfolio

Advice was also provided by Computing Services Manager and Computing Services staff.

### **Project Management**

The project was managed and monitored through:

- A series of formal meetings between the Head of Information and Learning Services, the Slide Curator and the Slide Technician/Photographer. Apart from outlining strategy and time scales, these often focussed on specific major objectives (e.g. the selection of a DAMS).
- Frequent and informal meetings between the Slide Curator and the Slide Technician/Photographer. These focussed on more day-to-day arrangements, e.g. selecting work to be photographed digitally in the Show,
- contacting commercial photography labs to arrange writing digital images to slide. (In the event, this need was met by the film writer jointly purchased with Photography).

### **Selection of a Digital camera and other equipment**

The Slide Technician/Photographer obtained information on digital cameras as part of the digital photography courses that he attended at the City Lit. He also researched further information on the Internet.

The equipment purchased was:

Nikon D1X digital kit	£3235
Nikon lens AF24-85mm f2.8-4	£400
Lexar 512 MB CF memory cards (x 2)	£980
Nikon EN4 batteries for D1X (x 2)	£140

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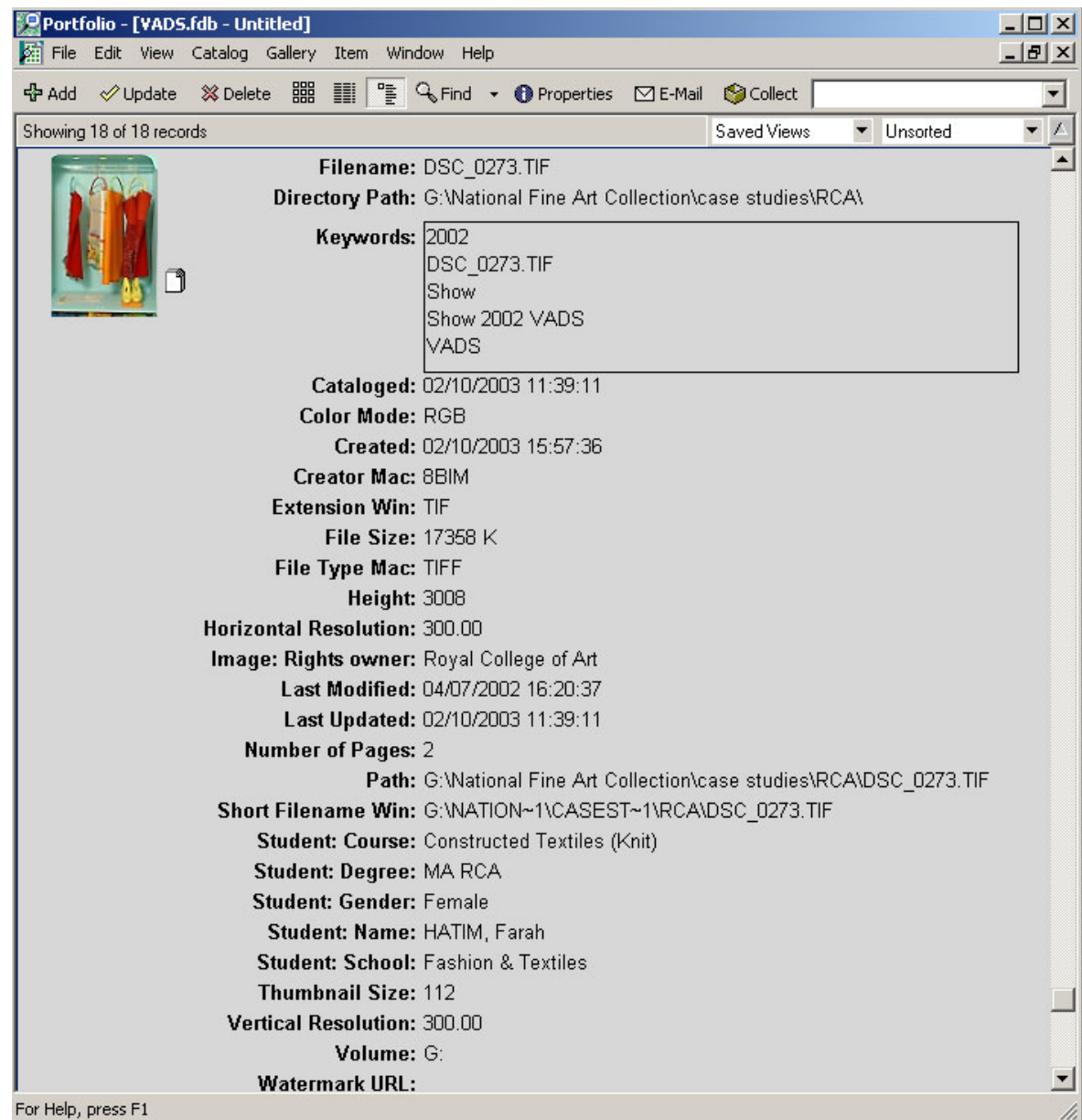
Other equipment needed to photograph the Shows, such as tripods, lights and light meters, already existed.

### Selection of a DAMS

One of the immediate issues we had to address was how these digitised images would be saved, catalogued, stored and accessed.

We decided to evaluate a number of the off-the-peg Digital Assets Management Systems available.

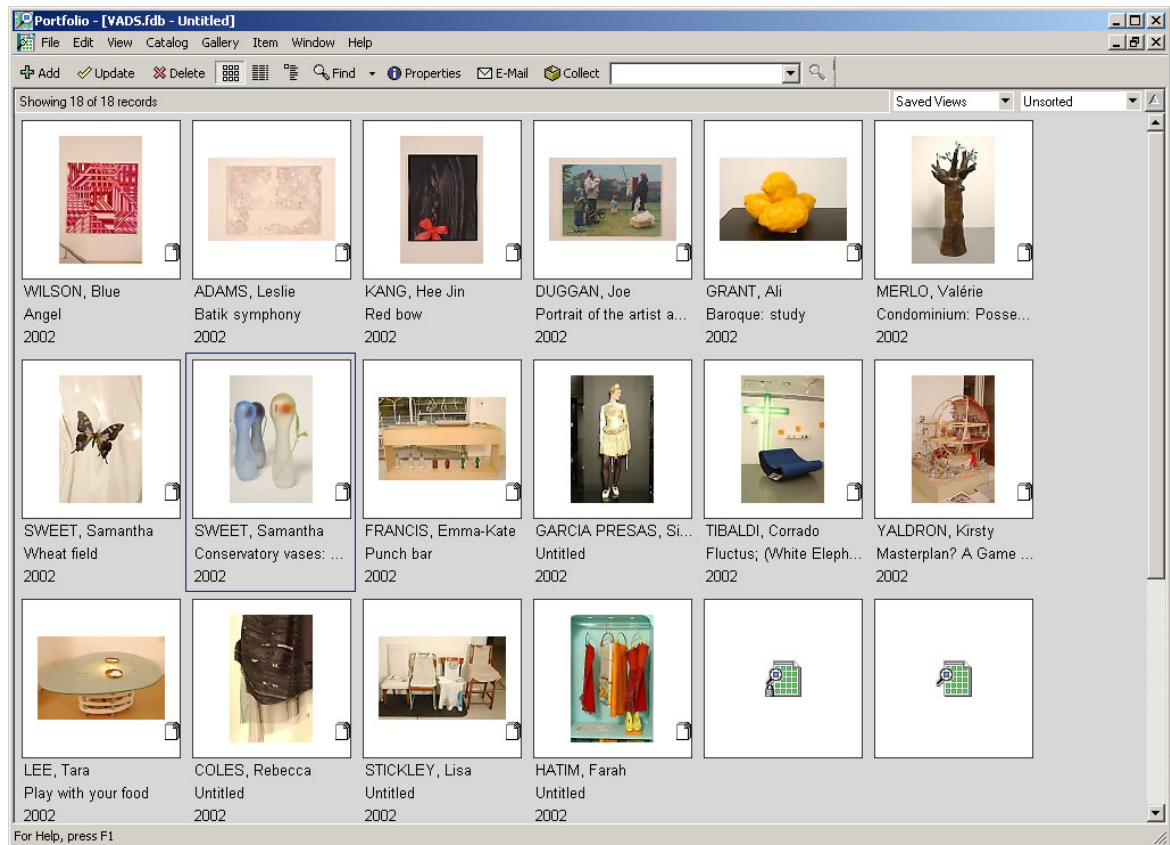
We narrowed down our choice to three products - Canto Cumulus, Cintra MAS and Extensis Portfolio - which we evaluated on the basis of their functionality, ease of use, reliability, fit with our existing technology, scalability and initial and ongoing (maintenance) costs.



List View in Extensis Portfolio, showing technical metadata

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Out of these we selected Extensis Portfolio, which we trialed as a single user version before proceeding to purchase a server version. Extensis Portfolio had been a market leader for over ten years, was well supported and affordable and there were no ongoing costs. Another factor in our decision was that we were able to use in-house support from a member of the College who was already familiar with Extensis Portfolio.



*Thumbnail View of RCA images in Extensis Portfolio*

### Cataloguing using DAMS

Once the images were transferred from the digital camera's memory card to the DAMS, they could be catalogued using controlled vocabularies such as AAT (Getty's Art and Architecture Thesaurus).

A database for the Slide Record already existed on File Maker Pro, which included fields based on the Visual Resources Association cataloguing guidelines, and initially it was planned to carry on inputting data into this database and then import to the DAMS. However, the technician who had worked that previous summer on photographing and setting up a database for recording the College Collection of Paintings (as part of the VADS Fine Art Collection Project), and who we had brought into the project as a technical advisor, suggested an alternative method. He advised us to enter data straight into Extensis Portfolio, rather than importing fields via another database.

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Information about the images was taken from the Show lists prepared by the courses, which were sent as document attachments to the Slide Curator, who then cut and pasted the information into pre-set fields, e.g. course, student name, title (of work), materials, technique, object type and measurements (if available). The Slide Curator was also responsible for matching up the data for the images with the actual work in the Show.

Our Technical Advisor also helped set up fields and was later able to demonstrate these aspects of the DAMS during a college-wide demonstration of the system to interested staff. (see appendix)

### **Staff Development and Training**

There were staff development and training requirements for both the Slide Curator and the Slide Technician/Photographer.

The Slide Curator's training needs largely consisted of acquiring a good familiarity with Extensis Portfolio, together with research into cataloguing digital images, for which she attended various workshops and conferences.

The Slide Technician/Photographer needed to acquire a high level of skills in digital photography. He selected himself the appropriate courses, for which he was funded and released time to attend. These included an ADC-LTSN & TASI workshop on Creating a Digital Image Archive for Learning & Teaching in Art, Design & Communications, a 5-day course in Digital Imaging at the City Lit. (January 2001) and a part-time 23 week training course in Digital Imaging for Photographers at the City Lit. (2001/2002).

### **The Pilot Project Experience**

Before proceeding to a stage of exclusively digitally recording the show we decided to run a pilot project (2002) to identify any issues and problems. Specifically we wished to address two issues:

- To identify particular logistical problems relating to the process of digitally photographing the show – use of cameras and other equipment, saving and downloading images, etc.
- To establish appropriate methodologies and standards for storing, cataloguing and indexing digitised images using the DAMS.

For the pilot project we had not reached the stage where we felt ready to make a choice between the range of high specification digital cameras available. One of the difficulties in this selection process is the almost constant upgrading of the technology available. Nor had the College at this point agreed the funding! We therefore opted for renting a suitable digital camera – a Nikon Coolpix 5000 – to use for the pilot.

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We decided to record a sample set of digital images across the Show. This was a relatively small selection – thirty-eight digital images, covering Applied Art, Architecture and Design, Fashion, Textiles and Fine Art, were recorded digitally out of a total of 1,800 Show images.

With the exception of the Fashion Show that was only shot in Jpeg format, which takes up a lot less space on a memory card, the images were recorded as Tiff Files - 300 DPI (3008 x 1960 pixels).

At the same time as these digital images were recorded the Slide Technician/ Photographer was of course recording the Show with conventional photography. This necessitated carrying around and setting up equipment for both processes. We employed a full-time assistant to help with this task for the duration of the Show.

There are inherent problems with making a photographic record of the Show. Occurring in two parts, the Show is punctuated by examinations, private views, corporate entertainments and other events. During these events the Slide Technician/ Photographer cannot gain access. It is always an extremely tight schedule. The Slide Technician/ Photographer needs to work outside of core hours (evening and weekends) in order to complete the task.

A further difficulty in this type of photographic work is the variation in the nature and display of the works exhibited, which call for a range of often complicated camera positioning and lighting set ups.

One of the main problems encountered in recording the Show digitally in 2003 was the time taken in moving such large (17MB) images from the camera's memory to the DAMS (sometimes three or four times a day). All images needed to be copied over the network from the machine hosting the camera (acting as an online back-up) to the DAMS server, running on the Slide Curator's computer. The original transfer method using AppleTalk proved too slow, so the process was reviewed, and a faster method was devised.

Both computers were moved onto a 100Mb/s, switched network, and the network protocol changed from classic AppleTalk to a much faster IP/AFP, over a single Share on the SMA server. This achieved a minimum tenfold increase in transfer rate, with no negative effect on the rest of the network.

### **Quality Issues**

A major consideration was maintaining the quality of the images, including in those circumstances where they were projected in an enlarged state, for example, on a Lecture Theatre Screen.

Obtaining user feedback on precisely this question of the quality of the digital images, compared with that of their conventionally photographed counterparts, was therefore seen as an important requirement.

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To obtain feedback a demonstration was organised in the College's main lecture theatre. This was widely advertised. About forty members of staff, representing a cross section of academic, administrative and technical staff attended the demonstration. (see appendix)

At the demonstration, using two projectors, a set of conventional slides and slides produced from digital images of the same objects were projected simultaneously. The audience was invited to comment on them, and in fact to guess which process produced which image. In effect, we staged a "blind tasting".

The presentation included a PowerPoint introduction outlining the motives for adopting a digital approach and the perceived benefits of doing so. There was also a session describing the process of cataloguing the digital images, showing how they were organised within the DAMS and could be searched for, retrieved and displayed in a variety of ways.

The demonstration was recorded on video and notes of all comments were recorded.

Issues discussed included:

- the use of index search terms and the need to agree standards and offer the potential cataloguers/selectors sets of limited options
- image use in the assembly of slide shows
- storage issues – need for infrastructure, storage on hard disk, the use of CDs
- image manipulation
- sending images as email attachments

The conclusion reached was that the overall response was favourable and there was general enthusiasm for the project. Serious concerns about lack of quality in digital images were not expressed.

However, some interesting points emerged from the group discussion following the demonstration. For instance, there are always going to be variables – the normal processing of conventional photographic film resulting in variations in the hue and saturation of colours, the quality of the projection equipment affecting the sharpness of projected images.

One suggested advantage that digital images held over conventionally photographed images was that, post-capture, a greater fidelity to the original art/design work could be achieved through manipulation and colour management of the image on a Computer.

### **Copyright and IPR Issues**

Images of students' work, past and present, have been used to date in a variety of college publications, notably the Prospectus, the Show Catalogue and the Rector's Review. However, the notion of eventually making such

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images accessible via the RCA's web pages, heightened our awareness of the Intellectual Property Rights issue.

This proved a quite complicated and time-consuming issue. Up to 1996 the College regulations stated unambiguously that the IPR to images (and works) rested with the College. However, in 1996 the Regulations were altered and the re-wording left room for uncertainty.

Although we had consulted specialist legal advisors previously, we thought it best to err on the side of caution and again seek advice from solicitors who specialised in IPR. The result of their scrutiny of our regulations and subsequent advice took shape in three ways:

- Some minor amendments to sections of the student regulations. This ensured that in future there was absolute clarity that the IPR to recorded images (conventionally or digitally photographed) made by the College of students' work, rested in perpetuity with the College.
- Some text for letter to be sent to all second-year students (graduating in 2003) whose work would feature in the 2003 Show. Because the current regulations left room for doubt, it was felt that a signed letter authorising our free and continued use of the images was required.
- Some text for a letter to former students (for the period 1996 to 2003), that in a similar way to the letter to current students, sought their authorisation to use the images we had made of their work.

Changes to the Regulations have now been agreed and will take effect from October 2003. We have also sent a letter to all second-year students. To date 174 have been returned and there have been no objections to the use of the images.

## **OUTCOMES AND RECOMMENDATIONS**

### **Outcomes**

The Pilot experience and the results of the quality of images comparison process and user feedback provided us with the confidence to proceed to exclusively recording the 2003 Show digitally and cataloguing and storing the resultant images on our DAMS.

Currently we are working on linking the Digital Record of this year's Show to the College Intranet (which itself is being revised following the development of a new web site incorporating a Content Management System).

At a future stage we intend to make the Digital Record available on the College Web site.

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We await the outcome of the AHRB Resource Enhancement bid, which may allow us to proceed with the retrospective digitisation and its inclusion on our web site, possibly as part of a “Research Resources” section.

### **Recommendations**

The following guidelines, though not an exhaustive list, may be of assistance to other educational institutions, or their information services, contemplating a digitisation process:

- Identify a clear set of objectives as to why you are digitising and measure the appreciable differences it will make to the services you offer
- Undertake as much background research as you can first – seek advice from relevant bodies and find out about other similar projects. If possible talk to those involved.
- Check out the IPR and copyright situation thoroughly for any images you are considering digitising and making available to a wide audience (via a web site, for instance).
- Think about the long-term requirements for cataloguing, storage and retrieval of large numbers of digital images
- Think about what effects the change will have on services you currently provide
- Select a DAMS solution with your highest ambitions and longer-term strategy in mind
- Consider carefully project costs, possible staff role changes and staff development and training requirements.

**Peter Hassell - Head of Information and Learning Services**  
**Jan Murton - Slide Curator**

**Royal College of Art**

**22/09/03**

## Appendix

### **Notes taken during Digital imaging Demonstration held in Lecture Theatre 1 on 21 May 2003. Over 40 staff in attendance**

The Slide Collection currently holds approximately 30,000 slides from the past 25 years. It is proposed that switching to digital imaging will increase efficiency. Dominic Sweeny presented several images, both digital and non-digital images.

#### Comments and Queries:

A = Audience member

S = Dominic Sweeny

H = Peter Hassell

A: Commented that there is a big difference between the colour saturation and the sharpness in the images.

A: Commented that you couldn't tell which image was best, as hadn't seen the original.

**S: Stated it was not about which is best, but about ensuring that the digital image is of a satisfactory quality.**

A: Commented that the colours are more vibrant in colour in the non-digital images than the digital images.

**S Swapped the projectors around and the images appeared different.**

A: General consensus that the projectors are unreliable.

**S: Commented that slides deteriorate over time and that most galleries have started to record digitally.**

A: Asked if any colour keys been used.

**S: Confirmed that no colour management had been done.**

**H: Stated that more colour accuracy is attainable, by altering the colour balance on computer program.**

**S: Stated that it costs £0.80 to print a digital image on premium quality photo paper. There are currently no facilities to duplicate slides in the college so it must be done externally, at a high cost.**

A: Asked if there are any copyright issues with using the images.

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**H: Stated that having sought advice from RCA lawyers, letters are being sent out to students, asking them to sign and return a form granting permission to use their work. The departmental administrators will be asked to encourage students to sign and return the letter to ILS.**

**S: Pointed out that if the images are on the new website, the Press can download the images but are required to register first.**

A: Asked if S had digitally scanned the original slide so that comparisons can be made with the original?

**S: Said no, this hasn't been done, but there are many variables that can affect the outcome, such as the quality of scanner.**

A: Asked how this is going to work with animation?

**H: Said it would be possible to keep digital short clips of animation.**

Jan Murton and Nick Frayling deliver a presentation on how the digital images could be searched for in a database using different fields - such as student, type of painting, title, year, department. The results can be displayed as text or thumbnails. This could prove especially useful for putting together slide shows.

### Comments and Queries:

- It was suggested that there is no need to download images onto the Macs, but the slideshow could be put together using the Intranet. However, again, a limitation could be the quality of the projectors.
- Q: Where is the material going to be stored?  
A: ILS will provide a server to store the material.
- Q: Will previous pictures be available on a CD or a server?  
A: They will be available on the server.
- The originals will be stored on hard disk, to ensure sufficient memory for high quality images.
- There was concern with the process of searching for images using specific fields (as Jan and Nick presented). Descriptions of images can vary from person to person, which can result in confusion. Selecting the description from a drop down list is a possible solution to this.

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### **SOME FINAL THOUGHTS**

The ability to manipulate and e-mail the images would prove to be very useful. There was concern with how it would fit in with animation.

It was thought that the digital images looked good. The only concern was with the storage issue, and the need for the infrastructure to support the software.

General consensus was that it looks very promising, and will be useful for showing a collection of images.

Thought that the quality of image is great, only concerned with the issue of the search criteria on the database.

Some thought the non-digital images looked better. Nonetheless it was agreed that it was a great idea with many more options, such as putting images onto a CD.