REPORT 1990

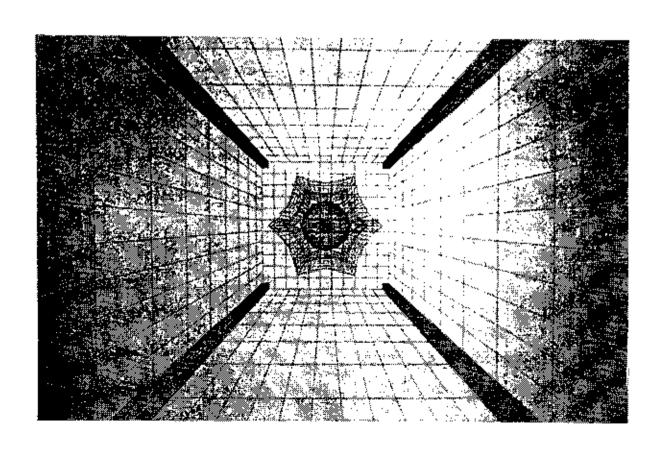
ANAT SECOND NATIONAL SUMMER SCHOOL IN CADCAM

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for

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ARTISTS CRAFTWORKERS DESIGNERS



IMAGES:

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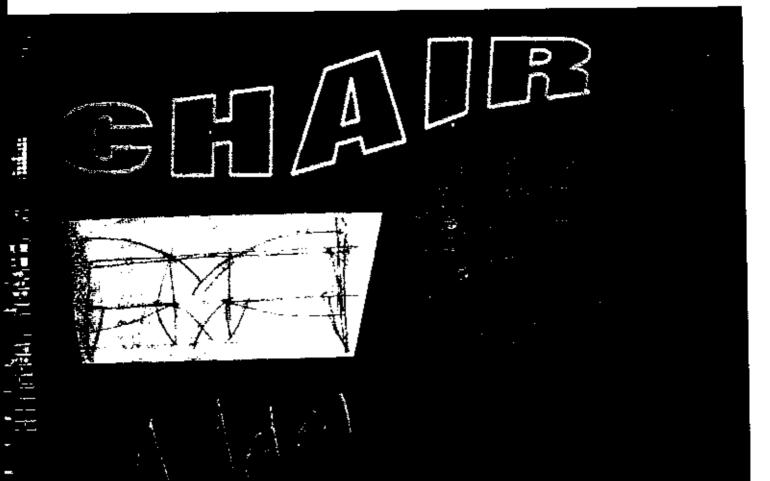
Front cover:

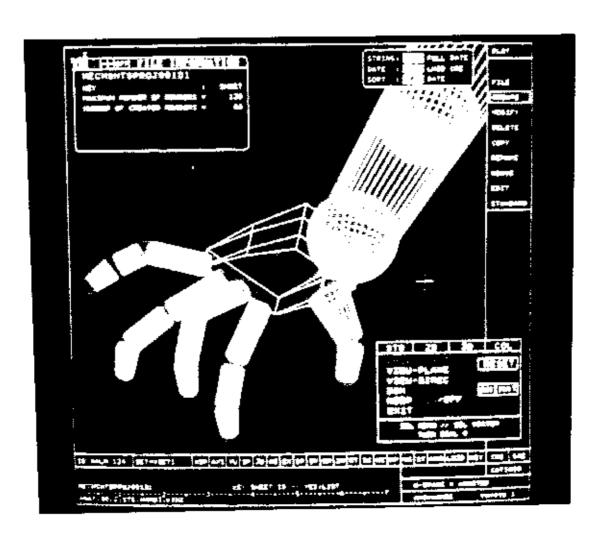
Pen plot by Simryn Gill. Produced using CATIA software on IBM hardware

Inside cover:

Above - Image by Nic Beames produced using CATIA and CDI software on Silicon Graphics hardware

Below - Prototype robotic arm by Stelarc produced using CATIA software on IBM hardware





ARTISTIC REPORT

Co-ordinating Body: Australian Network for Art & Technology

Assistance Provided By: South Australian Department for the Arts

Western Australian Dept for the Arts

Dept of Education, Training & Technical & Further

Education

City Art Institute

Canberra Institute of the Arts

Tasmanian Arts Advisory Board

Qld Arts Division

overview

The Second National Summer School for Artists, Craftworkers, and Designers, was coordinated by ANAT and held at the Advanced Technology Education Centre at the Regency College of TAFE in Adelaide in January, 1990. The program of the Summer School is designed to both introduce and extend skills associated with the use and creative application of new technologies, whilst encouraging educational institutions to advance the establishment of courses and training programs centred around the use and applications of new technologies and techniques. It is especially designed to foster the improved capabilities of artists to use new technologies and techniques, and to establish the potential for artists of new and emerging technologies.

This school followed through with the aims and initiatives of the first school held in January of 1989. Many artists consider themselves to be isolated from the newer forms of technology both by access to training and because of the cost of much of the new technology. The rapid rate of technological development, coupled with the information explosion and an education system primarily based on models developed centuries ago, has contributed to a situation where a considerable section of the general community is ill-equipped to evaluate the social, cultural and environmental impact of new and emerging technologies. Assisting the skilling of artists and promoting access in the field of new technology is a focal point of ANAT's primary aims.

The Summer Schools have addressed 5 major areas of difficulties of access as identified by the art and technology community within Australia:

- access to material resources (including financial assistance).
- access to technical assistance
- access to information.
- access to training and skill development
- access to technological facilities

participation

Artists participation was increased in the 1990 school, with a total of 19 artists from around Australia participating, as compared to 12 in the 1989 Summer School.

ANAT endeavours (in all of our projects) to have a balance of gender and also to ensure a national representation of artists. (State representation was determined firstly by whether applications were received from a particular state, and secondly, by funding attracted from sources within each state.) To this end, there were 10 female artists participating in the school, and 9 male artists. The state representation was as follows:

- * Western Australia 3 * South Australia 5 * New South Wales 5 * Victoria 2
- *Tasmania 1 * Australian Capital Territory 1 *Queensland 2 * Northern Territory
- no applications were received

We notified several arts and educational organizations in the Northern Territory but did not receive any applications from artists working within that state. Our links with the NT need to be developed so that we are more effectively reaching the artists through our communications. Again, we do not have very strong links with Tasmanian artists, and despite our efforts to distribute information throughout that state, we did not get a lot of response. This is possibly a reflection of the isolated conditions that Tasmanian and Northern Territory artists are working under, and we are endeavouring to improve our liaison and networking in this respect.

ANAT applied to various sources for the funding of the ATEC tuition fees, facilities hire, participants travelling expenses, and tuition fees and travelling costs for the specialist workshop tutors. Funding was sought from state arts, cultural, employment, education and training departments. ANAT recieved funds from the South Australian Department for the Arts (\$2,000), the Western Australian Department for the Arts (\$2,000), and the Department of Employment, Training, and Technical and Further Education (\$2,900). City Art Institute and the Canberra Institute of Art, the Queensland Arts Division and the Tasmanian Arts Advisory Board all provided substantial funds to individual artists to participate in the school. There was a general increase in funding and support for the Second Summer School, and it is anticipated that we will attract further and increased support in the schools to follow.

benefits

Our ongoing communication with the artists demonstrates that projects and activities instigated as a result of their participation in the Summer Schools are varied, and include artistic projects and accomplishments, as well as increased employment and further educational opportunities.

We sent out forms to the artists requesting information on **projects and activities** either instigated, in progress, or accomplished <u>as a result of their</u> <u>participation in the Summer Schools</u>, and received the following results:

63% of the participants have undertaken further education and/or training. The fields include computer graphics, CADCAM, video animation, 2D/3D/4D design and application systems, graphic design, fabric design, textiles, new media, t.v. production, computer generated holographic imagery, and graphic art.

36% of the artists were also educators, and are actively introducing more students to the use of computers in an artistic context. To this end, they are encouraging and informing their host institutions with regard to the acquisition of appropriate hardware and software.

The schools have prompted 15% of the participants to undergo further research into such areas as the effects of new technology on design and art practice, the application of numerically controlled machines to art forms such as holography, and video/image input and output devices.

42% of the artists have secured employment opportunities as a result of skills, training and knowledge gained at the Summer Schools, including: several commissions for sculptures utilising laser-cut patterns, production and design of furniture and value added goods, agents for design systems, studio craftsperson responsible for establishing a new hardware and software system for the textile department of a university, commission for promotional video for a resource seminar on the uses of multi-media tools in education, and starting a business as consultants on programming, graphics, electronic networking and video production and post-production.

Artistic accomplishments have come to fruition via the production of works including laser cut furniture, sculpture, photographic, fabric design, literary, lithographic, textiles, design, robotic prototyping and research. An exhibition of 1990 Summer School works has been displayed at Adelaide University's Union Gallery. Several of the artists have presented major exhibitions of works generated entirely by the the computer systems they were introduced to at the schools. During AUSGRAPH in September, ANAT will present an exhibition of works at the Linden Gallery in Melbourne created by past Summer School students, and again, generated entirely by high technology applications.

Most importantly, <u>all</u> of the participating artists have stated that the Summer Schools have informed their artistic practice. Participation in the Summer Schools and the acquisition of skills and knowledge has in many cases empowered them in such a way as to have increased their ability to affect the economic mainstream, as artists.

Many of the participants have described the knowledge, techniques, skills and networks developed through their participation as invaluable and revolutionary. The 1989 and 1990 Summer Schools have effectively served as a catalyst for action.

List of Participants

■ Martin Anda

W.A.

graduate research assistant, Murdoch University, W.A.

Phillip Bannigan

S.A.

artist/computer applications/technical officer, Sth. Aust. School of Art

■ Nic Beames

W.A.

artist/designer

David Cranswick

Tasmania

sculptor

Tanya Court

W.A.

artist/designer

■ Paula Dawson

N.S.W.

holographer

Phillip George

N.S.W.

photographer/lecturer, City Art Institute

f Simryn Gill

S.A.

illustrator/printmaker

Lynne Roberts-Goodwin

N.S.W.

photographer/lecturer, City Art Institute

Richard Guthrie

NSW

film & video/ lecturer, City Art Institute

Rodney Harris

S.A.

photographer/lecturer, Nth. Adelaide School of Art

Sue Harris

SΔ

artist/computer applications/tutor, Sth. Aust. School of Art

■ Deborah Huff-Johnson

A.C.T.

student, Canberra Institute of Art/leather&textiles

Stefan Khan

S.A.

artist/designer

Wendy Mills

QLD.

sculptor

I Sandra Shaw

N.S.W.

textile designer/printer

T Rose Marie Szulc

VIC.

textile designer/educator

■ Stelarc

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VIC.

artist/robotics

■ Bernadette Will

QLD.

textile artist

Name of Organisation

Australian Network for Art and Technology

Postal Address

P.O. Box 8029 Hindley Street SA 5000 phone: (08) 2319037 fax: (08) 2117323

Contact Person

Virginia Barratt Executive Officer, ANAT

Project

To co-ordinate the Second National Summer School for artists craftsworkers and designers in computer-aided design & computer-aided manufacture (CADCAM), and interactive multi-media through the Advanced Technology Education Centre, Regency College of TAFE, in Adelaide in January 1990.

Introduction

The Second National Summer, School in CADCAM for artists craftworkers and designers follows the success of the first such skilling course in January of 1989.

The courses are unique in that they focus on artists' applications of computer aided technology. Though computer aided design and manufacture is the tutorial model, a strong interdisciplinary emphasis will be apparent in the Second Summer School, with skills and concepts which can be readily transferred to a range of practises and systems following the school. As pointed out by Lyn Tune, one of Australia's leading artists accessing new technologies, the focus now is on interactive multi-media, not just CAD or CAM.

With this in mind, there will be a variety of equipment for participants in the 1990 Summer School to access, from interactive video to textile design software. In addition to the technical experts, there will be technologically literate artists and designers teaching the students, as they are familiar with the conceptual problems faced by artists first coming face to screen with what are often percieved as dehumanising machines.

Each artist will have their own workstation and receive one-on-one tuition, and it will be necessary for the artist to personalise the technology to suit their particular project or goal needs. This process of intensive and personal tuition, and establishing a rapport with the equipment encourages the realisation that, far from dehumanising their art the use of technology may actually have a humanising effect. Artists involved in the First National Summer School in CADCAM demonstrated a lateral approach to problem solving, which often emphasised new uses and new areas of exploration for previously under-utilised and use restricted technologies.

One of the findings of the report of the Art and Technology Pilot Project (March '87) was that there has been limited opportunity for artists to acquire both knowledge and skills in high technology. This lack places a very real limitation on the professional development of artists wishing to work within this field.

High tech tools of expression and creation have historically been (economically) inaccessible to artists, remaining housed within the walls of scientific, research and educational institutions. This gap in available training options has been noted by Dale Durie, Executive Officer of the South Australian Arts Industry Training Council, who pointed to the television industry as an example. There are a lack of skilled graphics workers in this field familiar with computer generation of logos and animation, and nowhere for them to receive training.

Artists have a critical role to play in the development of an innovative knowledge-based economy in Australia. Through a wide range of mechanisms, including educational initiatives such as the National Summer School, ANAT aims to assist artists to play a more central role in the development of a 'productive culture'.

Underpinning ANAT's aim to assist artists acquire skills in the use of new forms of technology is the belief that the larger community will benefit through artists' usage and development of high technology. Education is seen as the fundamental key to developing and encouraging an awareness of innovation, and consequently an economy which makes use of the skills and creative wealth embodied by the nation's artists.

Hopefully, educational programmes modelled on the Summer School will enable previously separate sectors - Art and Industry - to begin to speak a common language. An awareness of the need for this communication is developing throughout art and educational institutions, and in response many now have departments equipped with a range of sophisticated technologies for image production. Óne of the roles of the Summer School is seen as the skilling of art educators in the uses of image generation technology, in order that students graduate with a high level of technological literacy.

In January this year an Open Day was held as part of the Summer School activities, where top level representatives from government and the corporate sector met with artsworkers. The enthusiastic response of the representatives to the formal and informal presentations by the participants, and the addresses by Dr. Peter Ellyard of the Commission for the Future, demonstrated that artists do have a role to play in the development of a 'productive culture'.

Similar activities are planned for the 1990 School, and ANAT expects considerable interest and attendance by the key players of the corporate, government and education sectors.

ANAT information indicates that the efficient linking of art and technology is of major importance globally. In Utrecht, the Netherlands, statistical research into the growth of new technologies and the impact of this on the arts, industry and science has been undertaken by the Media Art Development Unit for the Dutch Ministry of Culture. In interviewing top management of leading Dutch Industrial companies, it was discovered that, in the main, creativity was at all times related to dynamic situations; the dynamism being provided by creative and artistic input. Static situations tended to decrease creative output. In view of this, around 40% of the companies interviewed would welcome greater co-operation with technological artists, and of these, 70% expected tangible gains would result for both parties.

In 1992, ANAT will be hosting the Third International Symposium on Electronic Art (TISEA). This is a major and influential symposium which will focus on the issues reflected in this application, and examine the substantial co-operations that have developed between artists and industry. The works produced at the Summer Schools will be exhibited as part of this event.

At the moment the Summer School is an annual event, but it may be necessary to hold it twice a year as the applications for participation far outnumber the places available. The 1990 Summer School consists of a beginners' and an advanced course. The advanced level course was concieved in reponse to the need articulated by many of the 1898 participants for a higher level of development of the skills gained in the previous Summer School.

Goals of the National Summer School

- To assist the professional development of Australian artists and designers through the acquisition and development of new technology-based skills.
- To facilitate 'technology transfer', enabling artists and designers to impart knowledge about interactive technologies to other artists, students and indeed to industry. And to transfer information and skills acquired to other computing systems.
- To develop links between artists and industry.
- To introduce artists to a range of practical and theoretical issues associated with the use of new technology.

- To exhibit the results of this and other ANAT-initiated programs in an international symposium/exposition ANAT is hosting in 1992 - the Third International Symposium on Electronic Art (TISEA) and thus reinforcing internationally South Australia's reputation as a leader in this field.
- To present a successful model for future educational programs for artists and designers in the area of new technology that will be of great benefit to educators both in Australia and abroad.

Course details

Course details are still being finalised by ANAT in consultation with Regency College of TAFE and other participating organisations - the following information is currently available.

The Summer School will provide a unique learning environment for artists, craftworkers, designers and art educators to acquire and/or develop a range of specialized computing skills which will enhance their art practise. As computer-based learning is most effective when class sizes are small, a maximum of 16 places will be available, 8 of which will be for individuals with no previous experience, and the remainder for individuals with some previous experience. The advanced sessions are included as a result of recommendations from participants in the first Summer School. Each student will have their own computer work station. To complement the core skills-based program, a number of satellite events will introduce participants to other new technologies and future-oriented issues through hands-on workshops, visits to industrial and research facilities, and a series of panel discussions.

It recognition of the fact that the focus now is on interactive multi-media, not just CAD or CAM, there will also be a variety of equipment for participants in the 1990 Summer School, from interactive video, to textile design software. In addition to the technological experts there will be technologically literate artists and designers teaching the students, as they are familiar with the conceptual problems faced by artists and designers first coming face to screen with what are often percieved as dehumanising machines.

Co-ordinating body: Australian Network for Art & Technology

Contacts:

Virginia Barratt, Executive Officer Caron Ward, Project and Administrative Assistant

Phone:

08-231 9037

Fax

08-2117323

Host institution:

Advanced Technology Education Centre (ATEC), Regency College of TAFE in South Australia

Contact person:

Pat Tucker, Acting Manager, ATEC Phone: 08-348 4586/08-348 4444

Timing:

January 1990 (3 weeks)

Cost of Tuition / Facilities Hire:

\$250/week per artist. This fee is set by the Advanced Technology Education Centre and covers the cost of tuition and computer facilities at ATEC.

Funding:

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ANAT is endeavouring to assemble a package of funding to assist artists' participation in the National Summer School. Requests for assistance have been lodged with a range of State cultural, education and employment agencies to offset the travel and tuition costs for artists wishing to participate in the School. Although the fees for the National Summer School are very reasonable for professional computer-based training, they nevertheless represent a considerable outlay for artists, a traditionally economically disadvantaged group in Australia. Participants will be responsible for a minimal registration fee of \$60, notwithstanding any assistance received from funding bodies.

A list of agencies being approached is as follows:

- ACT Arts Bureau
- . Department for Employment Education and Training
- . NSW Office of the Ministry for the Arts
- Queensland Office of Heritage and Arts
- SA Department for the Arts
- SA Department of Employment and Training and Technical and Further Education
- . Tasmanian Arts Advisory Board
- Victorian Ministry for the Arts
- Western Australian Department for the Arts
- National Arts Industry Training Council
- Digital Equipment Corp.
- . NT Office of the Arts & Cultural Affairs

There have also been initial discussions with the South Australian School of Art, City Art Institute, Darwin Institute of Technology, Canberra School of Art, Queensland College of Art, Swinburne institute of Technology with regard to the possibility of their sponsorship of a participant.

ANAT will be providing a direct financial contribution to this project in addition to covering all administration, publicity and miscellaneous expenses. ANAT will also be responsible for accommodation requirements. Please note that while ANAT receives funding for its core operations from the Australia Council, ANAT must raise special project funding from a range of government and private sector sources.

Participants will be personally responsible for the following:

- National Summer School registration fee of \$60
- daily travel to & from the Advanced Technology Education Centre
- any additional expenses incurred through their participation in the National Summer School (eg purchase of computer disks, software programs, art materials, personal documentation, etc)

Facilities:

Facilities to be accessed by the participants include a range of micro-computers, IBM work stations running the latest CATEA software, a DEC VAX 3000, IBM 32 bit RT workstations, Silicon Graphics workstations and NEC 386 running CADDSMAN software. Also a range of video equipment, Sony floppy disc cameras, plotters and printers.

Access:

Participants will be provided with pin keys, allowing 24 hour/7 days a week access to the computer facilities at ATEC.

Requirements:

There are two levels of tutorial available to the participants. Artists undertaking the beginner's course require no previous training, and the advanced level is suitable for artists with some previous knowledge of computing and CADCAM systems.

Proposed format

Week 1

An introductory program focussing on an examination of the concepts underlying the creation of data. 'Hands-on' tutorials on a range of CADCAM systems will be an integral feature of the first week. Pat Tucker and Roger Meakes will be the tutors from ATEC who will be providing technical expertise.'

There will also be a number of guest tutors presenting demonstrations, semmars and intensive workshops. These individuals are all artists who have expertise in animation, textile design, and imaging on a variety of systems.

Week 2

A period enabling participants to become more conversant with specific CADCAM systems, and other interactive technologies for output of the computer generated works. Creation of designs and manufacturing specifications. Specialist seminars looking at issues relating to artists' use of new technologies and techniques. Tours of high technology businesses and industry, such as Technology Park, Adelaide and Qikdraw.

Week 3

Consolidation of skills and individual projects developed in the preceding two weeks. Presentation of findings and projects to an invited audience and the general public during an open day.

This programme is the proposed format for the beginners course. The advanced course, while following the same basic format, will necessarily have to be modified according to the skills level of the participants.

Satellite events:

- fours to other research and commercial organisations housing high-tech facilities including Technology Park Adelaide.
- a seminar focussing on artists applications of CAD and other computing systems organised in collaboration with the Australian Computer Aided Design Society focussing on a range of practical & theoretical issues
- intesive three day workshop focussing on the AMIGA computer and various software packages.
- demonstrations and workshops with a state of the art textile design package CID, running on Silicon Graphics workstations
- an introduction to electronic publishing utilizing APPLE MacIntosh computers at the Adelaide College of TAFE
- an introduction to the latest video and photographic technology
- . a workshop on telecommunications, satellite technology & associated issues
- introductions to industry representatives
- an Open Day with addresses by key figures in the area of the development of the artist/industry interface.

Benefits:

This project benefits a number of sectors in the community.

To ANAT, the benefits of the project are numerous, beginning with the opportunity to realise the primary aim of the organisation, that being to 'develop, foster and promote the area of interaction between the arts, science and technology'.

For the artists involved, the major benefit is obviously the acquisition of a new body of skills which significantly influences their creative output, resulting in the generation of new and challenging artworks, and enhances their professional development, and thus their opportunities in the economic mainstream. Most of the involved artists found that the skilling course presented new possibilities for future work directions and have continued to work in the area of the art/technology/industry interface, in government or semi-government bodies, in industry or as practicing artists.

The South Australian artists involved in the inaugural Summer School have indicated various significant outcomes. These are outlined in the artists reports in the Summer School Report.

Pam Harris is an art educator who participated in the inaugural Summer School. As well as the obvious benefits for her students, as a result of her familiarity with new developments in the area of image generation, Pam is part of a new breed of technologically literate educators who will help to shape future directions within the area of art education.

lan White, a designer and craftsworker has turned his gained intellectual wealth to profit, by working on the improvement of the aesthetic component of designs for a large plastic-injection moulding company whose designs are generated by AUTOCAD software. Here he has advanced his knowledge of N.C. technology, and the plastics industry.

Briefly, other outcomes of the school are as follows. Roger Noakes had the opportunity to produce prototypes of sculptures through the CAM applications, and he also passes on his knowledge through the tertiary education system. Richard Grayson was able to acquire skills in the area of computer animation and is currently working on two projects, each utilising in different ways the CAD skills gained at the Summer School Richard Brecknock explored the architectural applications of CAD, and the possibilities of prototyping, which he continues to utilise within his practise. CAD has been probably one of the most influential developments to take place in architecture in the last decade.

Obviously it is of major importance to the South Australian art community to have a body of artists who are familiar with the latest technologies for image generation, design and production. South Australia has a high profile within the art and technology community; and also has a reputation as an innovator in the area of creative futures. In July of this year the Creative Australia Conference, held in Adelaide generated significant interest from diverse sectors of the community, and Technology Park in Adelaide provides a constant focus for new developments in the area of technology and creative management and production.

There is a major focus in education, government policy, and industry, on the development of an economy which makes use of the creative wealth of the nation. The artists involved in the Summer School will play a pivotal role in this development. They are part of a new breed of technologically literate artists and designers who not only have the skills, but also have the vocabulary to be able to provide industry with the creative input necessary for the production of Australian designed products. Australian designed products which will have a significant edge in the international market.

Selection Procedure

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Selection of successful participants will be undertaken by a panel of representatives from the Australian Network for Art and Technology, and Regency Park College of TAFE. The First National Summer School in CADCAM provided training opportunuties for a diverse range of artists, some of whom had previous training, others who had not. This non-exclusive policy proved very successful, and will operate again in the 1990 selection procedures. For those with previous experience, an advanced level of tutorial will in operation, and we will rely on the expertise of the participating tutors to advise on appropriate participants in this case.

ANAT has a policy of national representation and equal gender representation which applies to all of its activities.

Participants:

ANAT is unable to name the artists who will be participating in the school as yet. The School has been advertised through a number of media streams, and expressions of interest have been forthcoming. The sub-committee will meet in November to decide on the choice of artists, and will naturally inform you then of our choice.

Proposed Format

Sunday 7th

Informal meeting for participants who have arrived. Time and place still to be determined.

Monday 8th - Friday 12th

At 9 a.m. on Monday after introductions and discussion, the tutorial groups will be finalised (see the proposed tutorial groups below). The first week will focus on an introduction to the hard and software, which will take place through hands-on tutorial. The equipment and its capabilities is detailed below. During this week, most participants will identify objectives, and discover what is possible within the given timeframe. Beginners will need to develop an understanding of the conceptual space they will be working with.

Friday 12th

Tours of research and commercial organisations housing high-tech facilities, primarily at Technology Park. See the attached itinerary.

Monday 15th - Wednesday 17th

During this period there will be two specific workshops taking place. A workshop focussing on the creative applications of AMIGA computers will be run by PAUL BROWN, and a workshop focussing on textile design, using CDI software running on SILICON GRAPHICS workstations will be run by RHONDA O'MEARA. Again, we have nominated places for all participants in one of these workshops in the attached document.

Thursday 18th - Friday 19th

Participants will return to their original groups and continue hands-on exploration and work on particular projects. On Thursday afternoon there will be a seminar arranged by ANAT and ACADS (Australian Computer Aided Design Society) entitled 'Art Design and Technology', which will be held at Regency Park.

Monday 22nd - Friday 27th

During the third week of the Summer School participants will again be working within their groups on individual projects. We envisage that during this week there will be a substantial focus on interactive equipment eg. CAD to CAM, output to video, 2D printout, video to computer etc. Consolidation of skills gained in the first two weeks. Friday will officially be the end of tutorial. For those who remain in Adelaide for the weekend, there will be a social event.

Wednesday 24th

An Open Day will be held which will be attended by representatives from government, industry, education and the arts. Adresses by key players from these sectors will underline the importance of skilling artists in the use of new technologies and discuss possibilities for the future. A program for the day is attached.

Sunday 28th

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A social event will be held for Summer School participants, their hosts, and other people who had substantial input in the organisation of the Summer School.

Other Information

Though tutorial will take place officially between 9 a.m. and 5 p.m., five days a week, students will have pin cards which will afford them access 24 hours a day, 7 days a week.