A joint project involving the Schools of Engineering and Applied Science, is about to get off the ground — literally.

For the past year, work has steadily progressed on development of a remotely piloted vehicle and a tracking system, and testing of a half scale prototype will begin soon.

Eventually, the finished aircraft will be put to a variety of uses in a range of research projects.

According to the project leaders, Dr Don Scutt (Department of Mechanical Engineering) and Dr Ian Kirkwood (Department of Mathematics), the plane will have three main applications:

- Fitted with a camera, it will be capable of taking sequential photographs at low altitudes for use in building and road construction projects, mapping, etc.
- Air-sampling and other environmental measurements.
- Agricultural uses, for example, crop dusting of small, specialised crops.

The concept of developing Remotely Piloted Vehicles at Chisholm was first suggested by Applied Science Dean, Dr Eric Hemingway, early last year.

A committee was set up to oversee the project, a model plane was purchased and built, and Mr Scutt and Dr Kirkwood set about learning how to fly it.

Since then the project has developed in two stages, the half scale prototype which has a wingspan of 1.5 metres and the tracking system.

The prototype will be used in the next few weeks for aerodynamic testing and modification in the lead up to the building of the final model aircraft, designed last year by a Mechanical Engineering student.

According to Mr Scutt, the prototype will enable testing of a number of design features:

- Positioning of the payload (camera or air sampling equipment) forward of the engine, and therefore in clean air.
- Testing of modifications, including wing flaps or slots to enhance short take off and landing and slow flying characteristics.
- Testing of an on-board gyroscopic stabilisation system.
- The addition of floats to allow take-off and landing on water.

The tracking system developed by third year Mechanical Engineering student, Stephen Peters, makes use of a microcomputer and telegraphic sighting device which feeds electrical signals to the computer to be analysed and shown on a screen.

Once the flight path and the points along the track where photographs or air sampling are to be carried out are entered on the computer, this and the position of the plane are displayed on the screen, enabling adjustment of the flight path so the plane flies exactly on the predetermined course, and carries out its tasks at exactly the right points in space.

Dr Kirkwood says the tracking system is a crucial step in the project because of the difficulty in determining the exact position and height once a model aeroplane is in the air.

Building of the final aircraft, which will have a wingspan of about 3 metres and a payload capacity of 10kg, will begin when testing of the prototype and tracking system has been completed.

According to Dr Kirkwood, "once fully developed, we believe the plane will be a cheaper way of carrying out aerial photography, and a more feasible way of doing it at low altitudes".

Another advantage, he says, is that the aircraft can be used in situations where there is a likelihood of danger to a pilot of a full sized aeroplane.

The applications of model aeroplanes have already been well illustrated.

Mr Scutt says they were used very effectively by the Israelis against the Syrians a few years ago for reconnaissance purposes and in the United Kingdom by the Central Electricity Research Laboratories for aerial photography and environmental measurements such as atmospheric pressure, air sampling, temperature and humidity readings and ozone testing.

At Chisholm, the finished aircraft will be used primarily as a support tool for other projects.

Dr Kirkwood and Mr Scutt say to date the project has had "definite educational value", with a number of students, especially in Mechanical Engineering, developing in conjunction with the central project.

These include the design of the full scale model aircraft and the tracking system and the selection and testing of materials to be used in building the model.

Currently the RPV Committee is waiting on approval of its application for a $3000 New Initiatives Grant for further research.
Future directions set in plan

Achievement of declared status by 1985 and the management and development of the Frankston campus within a corporate Chisholm are two of the major priorities identified by the Institute Planning Working Party in its two-volume Planning Document released in June.

The 11-member Working Party (including a four member task force) was charged last year with the task of formulating a charter for Chisholm’s future development, including strategies for achieving objectives set for the immediate, medium, and long-term, and offering issues for future consideration.

Part 1 of the Planning Document, “Directions for 1984 and Beyond”, a number of objectives designed to form the basis of future development, includes Chisholm’s two of the major priorities identified by the Working Party: the development of the Frankston campus and the Corporate Planning Document deals with but Chisholm are two of the major priorities identified by the Working Party.

They include Chisholm’s relationship with the external community, student satisfaction, staffing issues, community involvement and funding constraints.

Part 2 of the document, “Chisholm’s Environment” looks at the Institute’s current position.

The Director, Mr. Patrick Leary, said recent public meetings organised to discuss the Working Party’s planning strategies, that the documents were in so way a fixed thing.

The Working Party believes what is being proposed is the start of the Institute’s planning process - but it has to be institutionalised.

He said this process had been put to the Chisholm community for critical analysis and comment, and be re-examined next year to make any modifications necessary.

According to the Working Party, future stages of the planning cycle should be consolidation of planning and design, evaluation and review.

‘During this time, it becomes the responsibility of all areas of the Institute to translate the Institute objectives into operational objectives.

It says the ‘co-ordination, monitoring and time-Tabiling of the planning cycle is therefore critical to the achievement and duplication of effort avoided’.

According to the Committee, Semester 2 for the two year part-time course.

The course aims to meet the need for the education of business personnel in the application of integrated computer and communications systems to business functions.

To coincide with the launch of the Centre, a new Graduate Diploma in Business Technology will be introduced.

The new Graduate Diploma in Business Technology has just been accredited and the first students will start at the start of Semester 2 for the two year part-time course.

Targeted at the needs of business, the course aims to meet the needs of the business personnel in the application of integrated computer and communications systems to business functions.

The course is designed to give students the opportunity to learn about the various aspects of business technology, and to develop the skills necessary to succeed in the rapidly changing field of business.

The course will cover a wide range of topics, including computer systems, data processing, telecommunications, and business management.

The course aims to provide students with the knowledge and skills necessary to succeed in the rapidly changing field of business technology.
The Pearyce Centre's versatility in tailoring its short courses to industry needs was well illustrated recently with a three day workshop for employees in the mining and petroleum industries.

Organised by the Adelaide-based Australian Mineral Foundation (AMF), the three day course from 2 July provided its 17 participants with an introduction to the essential aspects of computers in the exploration, planning and production in the mining and petroleum industry.

It was designed for managers and other technical and non-technical personnel with little or no experience in computing.

The AMF course run by the Pearyce Centre, and according to AMF Executive Director, Mr David Linn, Chisholm will be a strong contender in future if the opportunity arises to run more workshops.

The AMF's main function is to provide training and refresher courses for staff in the mining and petroleum industries.

Most of its courses are offered in Adelaide, but venues elsewhere in Australia and South East Asia are chosen when appropriate to the needs of the industries.

Mr Linn said the Pearyce Centre's course had been offered in response to growing demand by employees in the industry for a grounding in computers and computing. He said reaction by participants of the course had been extremely positive.

'It's based on a grid — a square within a square within a square — so everything is a division or a multiplication — part of something greater or smaller,' he says.

Based around the central theme of the Cross, the window symbolises many aspects of Christian experience in computing.

'There's all there,' Mr Thornton says 'but you have to look to find it.'

The window has been designed to transmit and reflect light using iridescent glass, so the design is equally striking during both day and night.

'It's an exceptional window because it's been conceived as an overall concept. It's been a privilege to work on it,' Mr Thornton says.

The four main areas of activity to be served by the Centre are:

* Specific undergraduate course studies, available to all DSBS degree courses.
* Post-graduate course content aimed at upgrading the general skill and knowledge levels of business practitioners.
* Short course development at various levels of education for a wide range of participants.
* Internal staff development and training for both general technology awareness and specific application education.

Although the centre is not a profit making venture, it will be partly commercial in offering short courses to business and the community.

Funds raised will be used to buy further equipment and software beyond that available from normal funding sources.

Chisholm Director, Mr Patrick Leary, said at the opening that the Centre was another step towards the Institute's objective of being a leader in technology.

'It would ensure we provide the type of education and training needed today,' and expose Chisholm students to the latest in technology, and 'equally important, expose the business community to the work of Chisholm.'

Ceramics education at Chisholm has taken a new turn this year with the development of a ceramic technology workshop at the Frankston campus.

According to Senior Lecturer with the Department of Ceramics, Mr Max Murray, the workshop has been set up to provide students with a total grounding in modern ceramic technology.

'It's a milestone in the development of the Centre,' he says.

'We did a survey of graduate students from throughout Australia at various ceramics conferences on where they felt improvements were needed in ceramic education.

'A major criticism was that people were not getting the direct workshop experience they felt was necessary in the real work environment.'

The workshop was established early this year with the aim of bridging that gap, and providing students with practical experience in all facets of ceramic production from the raw material stage.

Much of the initial work was done by the late Mr Eugene Kupsch, a senior lecturer in ceramics.

Development of the workshop was boosted recently with a gift of $45,000 in equipment by the CSIRO's Division of Building Research/Ceramic Technology section.

The equipment, which includes filter presses, a humidity drier, a laboratory sized extruder, mixers, a temperature recording system, a large ball mill, the production of ceramic glasses, a rotary sieve and blunging equipment, was donated as a result of an approach by Mr Murray, a CSIRO Ceramic Technology employee for 14 years.

Together with the existing equipment, the workshop now has the potential to produce several tons of clay material a week.

Mr Murray: 'There is no other institute to my knowledge with equipment as sophisticated and as capable of doing what we can now do.'

Already the workshop has been used to produce much of the material used at Chisholm and other institutes in ceramic pottery and art areas, and ceramics staff are predicting that eventually it will be virtually self-sufficient.

But the workshop is more than just a clay processing plant.

The recognition of the importance of training students in the technical as well as the aesthetic aspects of ceramics is a step towards the development of Australia's ceramics industry as a whole.

According to Mr Murray, it's one area which has enormous potential for growth, yet so far has been largely forgotten.

Unfortunately, he says, the majority of people view ceramics as little more than the production of cups, bowls and small objects.

'It's an exceptional window because it's been conceived as an overall concept. It's been a privilege to work on it,' Mr Thornton says.

The reality is that ceramics are essential to our modern way of life.

They are used in industrial machinery, solid state high technology equipment, household items and bathrooms, to mention only a few.

'Australia is possibly the cheapest nation in the world, and has a wealth of raw materials suited to ceramics, and yet we import about $100 million in ceramic goods each year (and that's a conservative estimate).'

'What we have to do is convince Australians that we can compete in the import market, and indeed, aim towards exporting Australian ceramics.'

Mr Murray says Australia stands a better chance than anyone of really benefiting by recognising the importance of the industry and capitalising on its potential.

The economic and employment implications of such a move would be far-reaching, Mr Murray claims. He sees the Frankston workshop as a major step in the right direction.

The equipment produces a range of different ceramics for particular industrial applications, for instance, ceramics which will stand high temperatures such as are wear resistant, and others which have the ability to remain unchanged under severe conditions.

Mr Murray says it's a development which is in keeping with Chisholm's multi-disciplinary approach to technology education, and has the potential to involve students in areas like engineering and chemistry in the future.
The Student Union Welfare Committee, in conjunction with the Student Union, is embarking on a program of activities aimed at making it more accessible to Chisholm students.

The fact-finding mission begins on Monday 30 July and will run until 14 September. According to Welfare Committee representative, Mr John Horley, the Pilot Contact Program has been designed to:

- Provide information, resources and support to all Chisholm students to help them maximise educational opportunities with support and follow up where appropriate.
- Encourage student integration, membership and communication.
- Highlight the workings of the Union to encourage real accountabilities and responsibilities.
- Develop in students a sense of self-esteem and pride in being a student at Chisholm.
- Use the program as a basis for broadening of positions where possible, particularly part-timers.

According to Mr Horley, 'The students are to make the most of their educational opportunities while on campus, they need to have information of what is where, who is who, and access to further information should they require it'.

From Community Week we'll get a picture of what information students have, and what information they need.

Analysis and documentation of Community Week will take place from 6–10 August, as well as preparation for the next round of activities, Multicultural Week, from 13–17 August.

Multicultural Week, Mr Horley says, aims to address the issue of multiculturalism in the Chisholm community.

The Student Union will spend the following week analysing and documenting the program, and preparing for the final leg, 'Grips and Grivances Week'.

Mr Horley 'Students need to feel that any queries or complaints they have are being dealt with effectively by the Student Union, and in order for complaints or queries to be most effectively dealt with, all lines of communication must be open, with effective co-operation between the Student Union, the Institute, Community Services and course advisers.'

He says it is an effective means of discovering 'the problems students really see as important, and the coping initiatives to deal with them'.

Responses to Grips and Grivances Week will be carefully examined by the Student Union during the following week, 10–14 September, and as a result of the overall program, recommendations on student needs will be made.

Mr Horley says the Pilot Contact Program has been scheduled to reach as many Chisholm students as possible, particularly part-timers.

---

**Student Union Welfare Committee representative, John Horley, with Chisholm's new artist-in-residence, Fiona McCullough.**

A feature of the Contact Program will be the appointment of the Student Union's first artist-in-residence, Fiona McCullough, a graduate in Art (Sculture) at RMIT, who is currently studying for her Graduate Diploma in Arts Education at Phillip Institute.

Ms McCullough, 21, will work with students on an 'environmental installation' in the cafeteria area of the Union building for the duration of the program.

---

**Grips and Grivances Week**

A seminar for the public, 'Plan to Invest', at the Caulfield Arts Centre on Saturday 4 August, the Caulfield Arts Centre is exhibiting works by Year 12 Creative Arts students from schools throughout Victoria.

The Gallery is at 441 Inkerman Road, Caulfield, is open Monday to Friday, 10 am – 5 pm. Telephone 524 3277 or 624 3278 for more information.

---

**SHEER MADNESS**

An exhibition of ceramics by Deborah Halpern and Pamela Irving, will be held at the Gryphon Gallery from 23 July – 10 August.

The Gallery is open weekdays and Saturdays, 10 am – 4 pm and Wednesdays until 7,30 pm.

The Gryphon Gallery is located at 341 8614 for more information.