The Opening of the New Research Glasshouse

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Following a major, £1.6 m investment, SCRI now has the most up-to-date facilities available for controlled, contained studies. This new building, officially opened on 9th June 2000 by Mr John Home Robertson, Deputy Minister for Rural Affairs, comprises two main areas: a headerhouse area, housing laboratories, offices and associated facilities; and a large, fully computer-controlled, glasshouse area. The building was designed to provide modern, integrated facilities for plant science research, and will house a number of projects of both fundamental and applied interest.

The glasshouse (approximately 1000m^2) consists of three main designated areas. The West wing comprises four large (80m^2) 'low level' containment areas. Eleven medium sized (25m^2) and 11 small (12.5m^2) sections make up the East wing. This wing is divided into two areas, a 'medium-level' containment area, and a 'high-level' containment area. Each area is separated by 'air-locks'.

The multi-component design of the glasshouse area will facilitate a great flexibility of usage, and the design of the complex conforms to existing and likely future containment requirements. The flexibility of design also can satisfy the differing requirements for containment or exclusion of plant viruses, microbial plant pathogens, and pollen.

Features The Glasshouse area has been designed with a number of efficiency features. These include mobile benching, which allows up to 80% of the floor space to be used, increasing the usable space by more than 20%, compared with fixed-benching systems. A 'Van Vliet' computer system controls heating, cooling and supplementary lighting. Internal thermal/shading screens also have been fitted to conserve energy loss, and enable potential energy savings of up to 40%. Ventilation is by filtered, forced-air, which can be arranged to provide positive or negative pressure, as appropriate, in individual cubicles.

The growth room area features nine 'Snijder' environmental growth cabinets with a wide range of utilities, including the ability to simulate sunrise and sunset, and to adjust light wavelength and intensity. There are also two vernalisation rooms capable of operating at -10^{o}C, and two large 'walk-in' controlled environment rooms.

The air-conditioned laboratories are designed for maximum flexibility of use. The two smaller areas are designed for plant tissue culture based applications and are equipped with laminar flow cabinets. The main lab has adjoining plant tissue culture growth rooms, each with fully adjustable lighting per shelf and a wide range of temperature options.

The new Research Facility was funded by the European Regional Developmental Fund, Scottish Executive Rural Affairs Department and Scottish Enterprise Tayside, with contributions from Mylnefield Research Services Ltd, The University of Dundee, and University of Abertay, Dundee.

The Opening Ceremony More than 130 specially invited guests attended the official opening on 9th June, and almost 1600 members of the public took the unique opportunity to visit the facility on 10th June, during the Public Open Day. The newly refurbished facilities for the Institute's research programme on Soil-Plant Dynamics, and for Spectrochemistry and Analytical Chemistry also were officially opened.

Edited extracts from the Director's welcoming address and the Minister's speech are shown below.

Address by Professor John Hillman, Director
On behalf of the staff and the Governing Body, Professor Hillman welcomed the Minister and distinguished guests to SCRI on the occasion of the opening of three key experimental buildings, 50 years after the initiation of research at Mylnefield, by the original Scottish Horticultural Research Institute. He said "SCRI has continued to thrive through some lean years of tight funding generally for science. We have achieved this by a combination of dedicated and able staff, the strong and unstinting support of the Governing Body and the Scottish Executive Rural Affairs Department (SERAD), and the support of a wide range of other public-sector and private-sector bodies."

He outlined the Institute's policy, which includes making a point of taking onto the staff outstanding young scientists to reinforce our growing international rôles, and described how the science has widened to encompass new technologies, new scientific disciplines, new concepts and new challenges. "Our commercial arm, Mylnefield Research Services Ltd, has grown and is particularly successful in a highly competitive commercial market. In so doing, its profits and activities bring us additional, unique resources, and we now have marvellous links with a whole range of industries from agriculture to food and drink, from biotechnology to forestry, from local industry to multinationals and through to healthcare. Over 100 organisations sponsor our work."

He spoke of his view that science has never been so exciting as it is now, and the commercial opportunities have never been so great. "SCRI embodies the very best of the UK Foresight Programmes. We are dedicated to improving wealth creation and the quality of life for mankind, and enhancing the competitiveness of UK industry. It is clear to the Governing Body and my staff that, regardless of our previous achievements, all of the developments currently in the SCRI and MRS Ltd pipelines mean that the best has yet to come. Scotland can be proud of SCRI."

"Today, you will inspect our latest development, a high-level research glasshouse facility to protect and cultivate our precious research material. My colleagues and I are grateful for all the initial efforts of the former Deputy Director, Professor Michael Wilson, now CEO of Horticulture Research International, and the commitment of Kevin Bazley and Michael Gale of Scottish Enterprise Tayside; the SERAD team, led by Dr Andrew Rushworth; Nigel Kerby of MRS Ltd; and contributions from Dundee University, and the University of Abertay, Dundee; and not least the officials connected to the European Regional Development Funding - Crawford MacCalman and Pat Muldownie of Professional Project Management provided excellent co-ordination with the builders, Muirfield Contracts Ltd and Bridge Greenhouses Ltd, and together with the suppliers, are to be congratulated on their efficiency and superb value-for-money. I should also like to thank the architect, Mike Rogers."

"The two refurbished buildings, one for Plants, Soils & Environment, and the other for Chemistry, demonstrate the special efforts of our Engineering & Maintenance team led by Steve Petrie. I also highlight the key rôles of Professor Iain Young, now at UAD, and Dr Bill Christie, recently retired Head of Chemistry. The Estate team led by Dr Graham Wood are to be congratulated for their efforts, too."

Professor Hillman commented on the importance that SCRI places on its Public Open Day, which is just one of the many ways in which SCRI contributes to the public understanding of science, before concluding "It is appropriate that the Minister visits us at this time – the various investments in us give us every confidence in our future."

Address by Mr John Home Robertson, Deputy Minister for Rural Affairs

The Minister thanked the Chairman of the Governing Body and Professor Hillman for the invitation, saying, "I welcome this opportunity to endorse the excellent science which is being worked on here at this Institute. This Institute's work is about the security of our food supply. It is as fundamental as that, and it is as important as that."

He spoke of the constant battle against pests, against weeds and against diseases, and how the economics of farming in Scotland today demand optimum yield from minimum inputs, in a changing climate. "Consumers rightly expect better quality, healthier produce and environmentally-friendly production methods. The farming industry does not always have the necessary expertise or the resources to undertake the complex procedures necessary in basic scientific research work, so we continue to rely on the research establishments, such as SCRI, to provide cost-effective research programmes. This Institute is a key component of the UK's capability in plant science, and is unique in its ability to undertake multidisciplinary research on this subject."

"The Rural Affairs Department's research programme seeks to address issues of particular interest in the context of Scotland's characteristic climate and geography. And it will obviously be relevant to crop research much further afield as well. This research will increase our basic understanding of key biological processes,

and how plants work. It will also identify features for development in plants, either through conventional molecular biology, or by using traditional techniques such as breeding and selection, or, indeed, through genetic modification. I know that is controversial nowadays, but it is important to understand not only the risks of that science, but also please let us understand the tremendous potential that there can be in that science."

He described how the Department had developed a new strategy for research which was published in the Spring of 1999. "The review highlighted the strength of the plant science programme, and identified an opportunity for SCRI to expand its research on cereals, focusing especially on spring barley - very important for the malting and whisky industry. With new equipment in its laboratories, and now this new glasshouse, the Institute is well placed to develop its position as a key centre for high quality research here in Scotland. This new glasshouse should provide the flexibility needed for the Institute's core work, and also for externally-funded research."

He stressed the safety considerations that had been paramount in the design of the complex, saying, "The controlled environment in the new glasshouse will enable the Institute to study a variety of organisms, ranging from viruses to plants, in accordance with national and international safety regulations, and that is very important. It is important to realise that the glasshouse is designed not only for containment but also for exclusion: it will keep bugs out as well as keeping them in!"

"The Institute's research into genetic modification forms part of a wider programme on plant science, crop improvement, and disease resistance. This in turn has the potential to improve the quality or quantity of food production, and to reduce environmental damage often associated with conventional agricultural practices. Ultimately, this should help to develop a more sustainable agriculture industry, and that must be in all our interests. The ability of the Institute to study biological processes at different scales, from individual cells, right through to whole plants, and to the wider environment, puts the Institute at the forefront in this important field."

The Minister then addressed the importance placed on the relevance of SERAD-funded research to the end user. "The rapid developments in plant science which have occurred over the last 20 years have meant that modern molecular techniques are now used to give far more precise and detailed information, on a much greater scale, than was ever previously possible. Fundamental scientific knowledge of this kind can have immediate commercial value in an industrial setting. This will produce many new scientific opportunities, and we want to take advantage of those opportunities. Recent inward investment to the Institute, and alliances that the Institute has forged with relevant companies, clearly demonstrate the Institute's high status in this sector. These developments at SCRI should help to enhance Scotland's reputation as one of the most dynamic locations for biological research in the whole of Europe."

He then turned his attention to the "vexed" question of GM science, "Well researched, and rigorously controlled GM science pioneered at Roslin, is producing drugs to help people suffering from cystic fibrosis. Work on crop science, here, can be equally beneficial. Scotland has a very fine reputation for quality science. I think that people are quite right to ask searching questions about GM science, but if we can be satisfied that the developments are good for mankind, and safe for the environment, it would be phenomenally silly to turn our backs on such beneficial and valuable ideas. There is a long, long history, of quality science in Scotland, and subject to rigorous precautionary controls, the Scottish Executive intends to support that good quality Scottish science."

Mr Home Robertson joined the Director in thanking all the various bodies (see above) who had jointly funded the costs of building the new facility, saying, "The project is a very successful example of partnership funding in support of new capital resources for economic development, and I welcome that. I am grateful to the other funders, for their vision and their commitment in supporting the project, and indeed to the project managers, engineers and contractors and their staff, for constructing such impressive facilities. Professor Hillman has already mentioned the very large number of people who have been involved in taking this project through from inception to completion, and I would like to add my personal thanks."

The Minister unveiled a plaque, and formally declared the new glasshouse and the refurbished ancillary accommodation open.