



# JUSTIFICATION FOR EXPANSION

June 2007

THE UNIVERSITY OF  
**WARWICK**

**THE UNIVERSITY OF WARWICK**

**CAMPUS DEVELOPMENT – JUSTIFICATION FOR EXPANSION**

**JUNE 2007**

# **CONTENTS**

**Foreword by the Vice-Chancellor**

- 1. Introduction – The Need for Expansion**
- 2. Warwick’s Success and Vision For The Future**
- 3. National and Regional Policy Context**
- 4. Warwick and the Region**
- 5. Research at Warwick**
- 6. Teaching at Warwick**
- 7. Enterprise and Innovation**
- 8. The Campus Community**
- 9. Rationale for Growth of the Campus**

*“We should like, in commending this Development Plan to your attention, to refer to two things: the urgency of the task which we have undertaken and secondly the uniqueness of the opportunity offered by the University’s site and position”.*

*Opening paragraph of the Foreword*

*University of Warwick Development Plan (April 1964)*



## **FOREWORD BY THE VICE- CHANCELLOR**

### **A CRITICAL STAGE IN OUR DEVELOPMENT**

The University of Warwick is one of the region's major success stories. Founded in the mid-1960s on land generously donated by Coventry City Council and Warwickshire County Council, it has developed into one of the UK's leading universities. It is currently rated fifth in the UK for research quality, consistently ranked in the top ten in the UK league tables, and has an international reputation for being innovative and entrepreneurial.

We are proud through our success to have been able to bring extensive benefits to our local region: we contribute nearly £300 million to the regional economy, and our presence creates an additional 6,500 jobs in the West Midlands; many of our graduates take up positions with locally based organisations; Warwick Medical School makes an important contribution to the region's healthcare; Warwick Arts Centre is visited by around 280,000 local people every year, and our Open Studies courses and Degree programmes have given many thousands of local people the opportunity to develop their knowledge and to move into higher education.

But Warwick has never been content to rest on its laurels, and we have now reached a critical stage in the University's development. It is time to move forward – to become not just a leading UK university, but one of the world's leading universities: our aim is to be placed firmly in the top 50 world universities by the year 2015. A great leap forward indeed, but one that we believe will bring enormous economic and cultural benefits not just to the UK as a whole but specifically to our surrounding community and region.

Research is the life-blood of a university like Warwick and even more so of the kind of university it wishes to become. So to realise its ambition, Warwick needs to grow its research both in quantity and quality. We need to provide state of the art equipment and be able to attract the very best researchers from around the world. We need to increase our postgraduate intake, for postgraduates are at the heart of a vibrant research community. And all this, in turn, requires space.

We believe that it is essential that Warwick's ambitions and its future progress are not constrained by lack of space. But we are conscious that we also need to preserve the University's very particular character and culture, which to a large extent is the result of being based on a single, coherent site. It is this, made possible by the foresight of our local authorities some forty years ago, that has enabled us to create a real campus community where students and staff from across the faculties live and learn together. Our plans, as set out in this document and the others accompanying it, will enable us to develop and improve our campus without losing its essential character: I commend them to you.

Nigel Thrift  
Vice-Chancellor



# 1. INTRODUCTION – THE NEED FOR EXPANSION

- 1.1 The University of Warwick has become one of Britain's leading universities in the short period since it was founded. The University is consistently rated for the high quality of its teaching and research and it has cultivated close and productive links with its local and regional community. It has however reached a critical point in its development and expansion is essential if it is to continue to meet national, regional and local policy objectives relating to higher education, employment and economic success.
- 1.2 Since it was founded in 1965, the University of Warwick has grown, both in size and in reputation, into one of the United Kingdom's leading higher education institutions. The University was rated 5<sup>th</sup> in the most recent Research Assessment Exercise (2001) and has consistently been rated as one of the UK's top research universities. This performance has also been reflected in the league tables published by UK newspapers. It is our ambition to become a world-leading university and this will have benefits not only for the surrounding community and region but also for the nation as a whole. Universities are the engines of growth for the economy and the UK economy needs the leading universities like Warwick to develop further and become leading international research universities. This can only be achieved through growing research both in quality and quantity. High quality research is expensive and necessitates being able to attract the very best researchers from all over the world. Research also needs space. It is essential that the ambition of the University of Warwick, with its far-reaching benefits, is not constrained by want of space.
- 1.3 The University has developed since 1965 on a site straddling the administrative boundaries of the City of Coventry and Warwick District (part of the County of Warwickshire). The core of the campus, including the students union, library, main academic buildings and arts centre, developed on the Coventry side with mainly residential accommodation built on land gifted by Warwickshire County Council, the latter being designated in 1960 as part of the West Midlands Green Belt. This approach was endorsed as recently as 1995, with the approval of the University Development Plan as Supplementary Planning Guidance by both Coventry and Warwick Councils.

- 1.4 The analysis of our existing estate illustrates that the area remaining available on Coventry land is insufficient to meet our likely future needs for academic, research and residential accommodation over the next 10 years, whereas there is ample room on the Warwickshire land, within our 1965 boundaries. We estimate that our predicted growth in research and teaching income during the next 10 years will result in an extra 4000 staff and students, requiring an additional 171,000 sq m over what we have today.
  
- 1.5 We therefore need to be able to optimise use of the main campus, including full development of the Warwickshire Green Belt land (as anticipated in 1965), because we need to be able to grow our activities. If the University does not expand and cannot grow its research and other activities, the consequences would be that it would attract lower external grant and contract income and therefore have less money for staff, studentships and equipment. The infrastructure would no longer be state-of-the-art. This would lead to lower capacity and capability and have a serious detrimental effect on the quality of research. Once the University drops below its 'critical mass', the amount of resources that are needed to be effective, we would not only lose staff, but would not be able to attract high quality staff to come to Warwick. The impact would be felt on the quality of teaching as well as research. Since the main purpose of the Research Assessment Exercise (RAE) is to enable the higher education funding bodies to distribute public funds for research selectively on the basis of quality, and institutions conducting the best research receive a larger proportion of the available grant, Warwick would lose core funding. This would result in a downward spiral with loss of reputation and profile further decreasing the ability to attract funding and high quality staff. Warwick cannot stand still with research.
  
- 1.6 All the evidence indicates that the quality and extent of the contribution to education and the economy that will result from the University's expansion constitutes "very special circumstances" that warrant continued development in the Green Belt. This document therefore has been prepared by the University to support a masterplan outline planning application, providing the justification for campus development necessary to demonstrate that "very special circumstances" exist in planning terms. Of course, the masterplan also addresses the continued development of the Coventry side of campus, including Westwood and Gibbet Hill, which are not in Green Belt.

- 1.7 It is essential that the University can plan comprehensively and consistently to meet its future physical requirements and the masterplan is its tool to do so. This follows in a long tradition of Development Plans dating back to 1964, which have been worked up jointly with its local authority partners. It is only a change in Government planning guidance (on Green Belts) that has necessitated a revisiting of the original justification for the campus to develop on either side of the administrative border.
- 1.8 The document sets out firstly Warwick's success story and its vision for the future (section 2) then, after reviewing the wider policy context (section 3), considers the university's relationship with the region (section 4). It goes on to describe the three key components of the University's activities – research (section 5), teaching (section 6) and third leg/commercial initiatives (under the heading "enterprise and innovation") (section 7) – before turning to the community asset that is the main campus (section 8). Finally, it sets out the rationale for the scale of development envisaged on campus over the next 10 years based on the growth in these activities (section 9).

## 2. WARWICK'S SUCCESS AND VISION FOR THE FUTURE

### Warwick's track record

- 2.1 The University of Warwick is one of the most dynamic and entrepreneurial higher education institutions in the UK. It is one of only six universities which have been rated in the top ten for research in every Research Assessment Exercise (RAE)<sup>1</sup>. Over the last 40 years, it has built a reputation for the excellence of its research and in the last national RAE (2001) was ranked fifth in the UK. Warwick's reputation is an international one. When announcing the visit of US President Bill Clinton to the University, in December 2000, the US National Security Advisor said that "Warwick is one of Britain's newest and finest research universities (and is) a model of academic excellence and independence from government."<sup>2</sup> In order to develop the University further as a world-class institution, we must be able to take future opportunities to expand our activities into new areas and have the very latest, competitive, research facilities.
- 2.2 Broader assessments of quality reinforce Warwick's position as one of the UK's leading higher education institutions. The University has been consistently placed in the UK Top Ten across a wide range of metrics by The Sunday Times, Times Higher Education Supplement, The Guardian and Times<sup>3</sup>. Across all disciplines, our research is the essential basis for the teaching programmes we offer to undergraduate and postgraduate students. We pride ourselves on being a research-led teaching institution and on the quality of the teaching we provide – in the last teaching quality assessment 22 departments were rated as excellent. Lifelong Learning, Open Studies and Continuing Professional Development programmes all benefit from the excellence of our research.
- 2.3 However, although the standing of the University of Warwick in the UK is excellent and our best research is international class, we have yet to make a

---

<sup>1</sup> The others are Cambridge, Imperial College, LSE, Oxford and UCL

<sup>2</sup> *The Times Higher Education Supplement*, 15 December 2000

<sup>3</sup> See for example, The Sunday Times University League Table 2006

(<http://extras.timesonline.c.uk/stug2006/stug2006.pdf>) and *The Guardian University Guide 2008* (<http://education.guardian.co.uk/universityguide2008/0,,2027789,00.html>) which rank Warwick 6<sup>th</sup> and 8<sup>th</sup> respectively.

major impact on international league tables. We are in the top 100 universities in the world in the Times Higher World University Rankings<sup>4</sup> but ranked 246 in the Shanghai *Jiao Tong* table<sup>5</sup>. This is primarily down to the 'relative youth' of the University, but to be ranked among the world leaders, it is critical that we develop our research and attract and grow the best researchers who will be tomorrow's Nobel prize winners.

- 2.4 Warwick's reputation for entrepreneurialism is based on its ability to translate research into practical benefits for the economy and communities. Our internationally known Warwick Manufacturing Group and the Warwick Business School are exemplars of this approach, which brings concrete benefits to the national, regional and local economies. The Warwick Science Park, owned jointly with Coventry City Council, Warwickshire County Council and the West Midlands Enterprise Board, is a further example of our success in turning research into business activity. Since 2000, the University has formed 30 new, high-technology, high growth, spin-out companies with a current turnover exceeding £7m, making a substantial, sustained and increasing contribution to the regional economy.
- 2.5 The University of Warwick has been particularly successful in reducing its dependence on government income by increasing its turnover in commercial activities. There are currently 17 commercial activities run by the University and revenue from these activities together with consultancy income generated by academic departments totals over £90m per annum. This equates to approximately 30% of the University's total income and the University is seeking to increase this proportion over time.
- 2.6 The following sections set out the University's mission (in the text box) and its Vision for the Future. Following on from these are a series of Overall Project Objectives which have guided the development of the campus masterplan.

---

<sup>4</sup> In the Times Higher World University Rankings 2006, Warwick is 73rd

<sup>5</sup> In the Shanghai Jiao Tong 2006, ([ed.sjtu.edu.cn/rank/2006/ARWU2006TOP500list.htm](http://ed.sjtu.edu.cn/rank/2006/ARWU2006TOP500list.htm)) Warwick is placed 246.

### **The University of Warwick's mission**

Our mission is to:

- To build an institution widely recognised, at a regional, national and international level, as a world leader in research and teaching
- To conduct research across all academic departments which makes a significant contribution to the extension of human knowledge and understanding
- Through our teaching and research programmes to equip our graduates with the necessary education and skills to make a significant contribution to the economy and to society as a whole
- To recruit students and staff with outstanding potential and to provide the best support and facilities to foster teaching, learning and research of the highest quality
- To serve our local and regional communities through the provision of excellent teaching, training, cultural and employment opportunities
- To exploit opportunities for collaboration and partnership with other HEIs, educational institutions, commercial and non-commercial partners
- To strengthen and diversify our activities in the fields of industrial and business liaison, innovation, exploitation and entrepreneurialism, thereby supporting economic growth and regeneration
- To continue our policy of making a high quality and challenging University education available to all those who are capable of benefiting from it, regardless of economic or social circumstances

### **Our Vision For Tomorrow's Campus**

- 2.7 Warwick has been a unique and uniquely successful institution in the history of British universities since its inception in 1965. It wishes to become a **universally acknowledged world centre of higher education by 2015** (its 50<sup>th</sup> anniversary), firmly in the top 50 of world universities.

2.8 To achieve this requires the university to focus on the following strategic ambitions:

1. To increase its **international reputation** for the very best research and teaching
2. To continue to attract the **highest quality staff and students** by virtue of its reputation and its supportive yet challenging community
3. To **reach out to relevant stakeholders** particularly in business, industry and government, but also the wider community, to win their support
4. To position Warwick as an **intellectual gateway** to the UK and beyond by bringing sharper focus to regional, national and international engagement so that Warwick is perceived as a key node on the international map of higher education
5. To generate a substantial **increase in income** to realise these ambitions, particularly through research growth
6. To make the **Warwick campus** into a representation of the University's strength of ambition and quality of imagination, distinguished by environmental quality, the highest standards of design, and a supportive collegial atmosphere.

2.9 These ambitions can be translated into four broad strategic goals:

**GOAL 1: to make Warwick an undisputed World Leader in research and scholarship**

2.10 It is imperative to produce an environment in which excellent research can thrive. This is the University's central aspiration which will drive all other activities. A range of proposals are under consideration including an Institute of Advanced Studies for international research exchange, further interdisciplinary Science Centres, selected research collaborations with overseas partners, and new buildings and equipment appropriate for world-class research.

**GOAL 2: to make the Warwick teaching and learning experience unique**

2.11 Whilst research is the lifeblood of a university like Warwick, teaching and learning are essential building blocks in the sharing and development of knowledge and the formation of enquiring and critical minds. Proposals include

a 50% increase in postgraduate research student numbers by 2015, potential changes to undergraduate programmes, continued investment in pedagogic innovation and the provision of appropriate high quality teaching and learning spaces to accommodate these future needs.

**GOAL 3: to make the University into an International Portal**

2.12 The University wishes to increase its international profile and will therefore continue its tradition as a portal for receiving and sending staff and students to and from all corners of the world. It will also seek to establish an International Quarter made up of the overseas operations of some of the world's leading research universities. This would involve exploring the potential for collaborative research with several of the top 50 universities (through the IAS referred to above) as a basis for them establishing a sustainable presence at Warwick. In turn, this would be a pathway to progressive expansion and roll-out to other international organisations.

**GOAL 4: to enhance the University's reputation with stakeholders in the UK**

2.13 Warwick's 'working region' does not easily map onto existing city and regional areas, but the University will seek to capitalise on its 'gateway' location between Coventry and Warwickshire, the Birmingham City Region and wider West and East Midlands, the centre of England and the whole of the UK. Engagement with the public sector to support policy and professional development will be a key feature of this approach.

2.14 The consequences of these strategic goals will be that the **size and shape of the university** will evolve over time. There is no significant growth anticipated in undergraduate admissions, although the potential for the establishment of up to three new departments and inter-disciplinary or internationally-oriented degree programmes will be explored, but there will be an increase in postgraduate research student numbers.

- 2.15 The **campus** is a vital element in symbolising what Warwick stands for, culminating in being voted the best campus in the UK in a 2005 THES student poll. However, it is also criticised for being rather sterile, lacking social opportunities, non-descript and low-key design, and failing both to create a sense of place and to declare its presence, particularly in the form of entrances. The University therefore wishes to consolidate what is good about the campus and create a better place to live, study and work: a genuine campus community.
- 2.16 Proposals include the potential for growth of the Arts Centre as a major international facility, much better staff and departmental social spaces, more overnight accommodation including greater staff presence on campus (through the development of a Staff Village), and upgrading of sports and recreational facilities including an Olympic-size swimming pool.
- 2.17 Warwick is a socially responsible institution and wishes to take an environmental lead by **creating a “green” campus** through policy, physical expression and influencing behaviour. All new buildings will be designed to the highest standards, including whole life cycle costing. Recycling and energy management will become even higher priorities. Sustainable transport to and from, as well as within campus, will be fostered. The campus could also become a botanical showcase, housing national collections, and there are aspirations for a sustainable energy centre to bring together the University’s sustainability research.

### **Campus Development – Overall Project Objectives**

- 2.18 A key supporting strategy for this Vision is the **Campus Development Masterplan**. It has been prepared over a number of years since the review of the 1994 plan commenced, and has been the subject of wide consultation with university staff and students, with the local authorities and other public agencies, and with the wider community in Coventry and Warwickshire.
- 2.19 It draws on the founding principles of the University from 1964, which foresaw a compact university with urban character, although preserving key landscape features for amenity purposes, with two thirds of the anticipated 20,000 students living on campus with all facilities within easy walking distance,

segregating traffic and pedestrians (which was very much a policy thrust of the era), and creating a lively place throughout the day. It was also intended to be a flexible plan to allow for growth and changing requirements, and was based on the fundamental decision to plan the university on a united basis – bringing humanities and sciences together.

2.20 The overall project objectives against which the masterplan has been tested are:

**OBJECTIVE 1: to plan for sustainable long term growth of the university to meet its strategic goals and Government objectives for higher education**

2.21 The original 30 year plan was for a student population of 15,000 by 1995 rising to 20,000. Current student numbers are around 16,000 and it is expected that the university will not exceed 20,000 FTE students before the end of the masterplan period, the majority of the increase being in postgraduate research.

2.22 Growth will focus on achievement of its vision to become a universally acknowledged world centre of higher education, particularly in the arena of research, with an emphasis on increasing its international profile and reputation.

**OBJECTIVE 2: to plan for an integrated university optimising the use of its established successful campus**

2.23 Acknowledging the importance of the quality of campus life in creating the environment for excellent research, teaching and learning to thrive, the masterplan will make best use of the campus, reinforcing connections between the four principal areas (Central West and East, Westwood and Gibbet Hill), extending the network of activity centres, maximising use of existing infrastructure, and fostering interaction between academic disciplines. A key aspect of this will be to capitalise on what is good about campus life, but create a better sense of place and more distinctive entrances and routes through campus and beyond.

**OBJECTIVE 3: to foster a ‘campus community’ where staff, students and those external to the university can come together to learn, study, research and interact to further human knowledge and understanding**

2.24 Campus is a vital part of creating a sense of community for those studying and working at Warwick, and the masterplan will help to develop exciting and stimulating environments capable of attracting and retaining the highest quality staff and students, as well as providing visitors with a positive experience of Warwick. This must maximise opportunities for ideas exchange and provide flexible space for inter-disciplinary collaboration.

**OBJECTIVE 4: to provide a robust and flexible framework for development of the campus to meet current and future needs**

2.25 As in the original Development Plan, flexibility is essential in allowing the evolution of a university in an ever changing political, economic and educational climate. The masterplan will provide a coherent framework around a set of strategic principles, in order to create a safe and inclusive environment with strengthened links to surrounding communities but within the campus, there will be flexibility to accommodate known, anticipated and future requirements.

**OBJECTIVE 5: to provide residential accommodation on or near campus for a high proportion of students and an increasing number of staff to maximise their contribution to campus life**

2.26 Again in support of campus life as a key ingredient of Warwick’s success, the masterplan will plan for an increase of approximately 2000 places in student accommodation on or near campus, and create a ‘staff village’ for academics and researchers and their families to feel more part of the campus community. Better social and leisure facilities within easy walking distance, which create vibrant places throughout the day, will also be incorporated.

**OBJECTIVE 6: to manage travel demand through a sustainable transport strategy to maximise accessibility of the university whilst mitigating the impact of traffic congestion on the area**

2.27 The campus provides benefits in terms of a reduction of travel demand by accommodating a high proportion of students close to where they study and objective 5 will further contribute to this. The University will however seek to influence travel behaviour of all staff and students through a Travel Plan exerting greater control over car parking, enabling better public transport penetration into campus and improving walking and cycling opportunities. In concert with the statutory authorities, the mitigation of traffic impacts on the local highway network will also be explored.

**OBJECTIVE 7: to pursue a sustainable future for the university and demonstrate long term stewardship of the environment by protecting and enhancing landscape character**

2.28 As a socially responsible institution, Warwick intends to take an environmental lead in developing policy on sustainability, influencing behaviour (as in objective 6) and promoting sustainable development through building procurement, landscape protection/enhancement and carbon management. The University will set challenging but achievable and affordable targets for sustainable growth, making best use of existing resources, whether physical, environmental, economic or social, and particularly optimising use of buildings, infrastructure and landholdings.

**OBJECTIVE 8: to develop further as a social and economic asset to the local community and the region, in broad accordance with governmental policy objectives**

2.29 Warwick's contribution to the local and regional economy, as well as its social and cultural role, is already significant but in pursuing its vision to become a world-class university, it will reach out to stakeholders in business, industry, government and the wider community to win support for its plans, to share resources, to collaborate and maximise spin-off benefits. This will include further developing Warwick Conferences as a key regional facility.

2.30 Warwick's current success and future ambitions are already well aligned with key strategic policy objectives at all levels of government, but will continue to respect local planning and environmental constraints, promote sustainable development principles, and support regional economic aims.

2.31 Finally, in delivering this project, the University will draw on and be inspired by its core values that have always underpinned its success: these being excellence; ambition and drive; entrepreneurial flair; cosmopolitanism; service; community and independence.

### 3. NATIONAL AND REGIONAL POLICY CONTEXT

#### The National Higher Education Policy Perspective

- 3.1 The future success of the national economy is dependent on the supply of a highly skilled workforce and a high level of research-based innovation and development. Universities play an important role in the local and national economy both as a producer of the skilled people at undergraduate and increasingly postgraduate level and as an engine of economic growth. In 2003-04, higher education in the UK generated over £45bn for the economy and supported over 600,000 jobs throughout the economy.<sup>6</sup>
- 3.2 The government has recognised this in its policy of expanding higher education, articulated in the 2003 White Paper on *The Future of Higher Education* which begins:
- “Our higher education system is a great asset, both for individuals and the nation. The skills, creativity and research developed through higher education are a major factor in our success in creating jobs and in our prosperity”.*
- 3.3 The White Paper recognises the need to increase investment in higher education for the benefit of the UK society and the national economy. It proposes to:
- Inject substantial further funding into research, concentrating research capacity in institutions with a critical mass of excellent research in order to maintain international competitiveness
  - Strengthen relationship between universities and business, fostering ‘knowledge transfer’, and encouraging closer links with Regional Development Agencies
  - Increase participation in higher education to 50% of all those aged 18-30 by the end of the decade
  - Expand numbers of (non-EU) overseas students

---

<sup>6</sup> ‘The Economic Impact of UK Higher Education Institutions’, Universities UK, May 2006

- 3.4 In March 2004, the Chancellor of the Exchequer announced the intention “to make Britain one of the most competitive locations for science, research and development and for innovation”. This was followed in July 2004, by the Government’s announcement that it intended to raise the level of investment in science in the UK from 1.9% of GDP to 2.5% by 2014. The intention is to increase investment in the public science base at least in line with the trend growth rate of the economy during the ten-year period, increasing science spending by around £16bn in real terms (at 2004-05 prices). This will result in a 75% increase in the current level of investment of around £22bn. The Government’s plans are predicated upon a significant increase in research investment from the private and charitable sectors as well as greater public spending.<sup>7</sup> This strategy has resulted in significant increases in Research Councils’ research funding allocations and those of other centrally-funded investors in HEI research.
- 3.5 The Government has also indicated that capital expenditure by the Research Councils will increase in the period up to 2007-08. Additionally, the Science Research Investment Fund (SRIF) will continue to disburse £300m pa over the same period.<sup>8</sup> The Government’s intention is to provide a culture within which institutions can forward plan with confidence and improve the quality of research.
- 3.6 In his 2005 budget speech, the Chancellor of the Exchequer announced the creation of a further five ‘Science Cities’, including one in Birmingham,<sup>9</sup> based on the endorsement of the concept in the Lambert Review.<sup>10</sup> Lambert had identified as an example of good practice the work undertaken in York by the University and the City of York Council to develop Science City York to promote the development of high-tech business clusters around the University and its local scientific partners.
- 3.7 Building on the additional resources announced at Spending Review 2004 for the sustainability of the UK science base, the Government has decided that Research Councils will pay 80% of the full economic costs of the research they

---

<sup>7</sup> *Science & Innovation Investment Framework 2004 – 2014*, July 2004

<sup>8</sup> *Science Budget Allocations 2004-05 to 2007-08*, DTI (May 2005)

<sup>9</sup> Rt Hon Gordon Brown MP, Budget Statement, 16 March 2005

<sup>10</sup> ‘Lambert Review of Business University Collaboration’, December 2003

fund. Together with increases in quality-related research funding through Higher Education Funding Councils and continuing support for the renewal of university infrastructure from the SRIF, UK research institutions will be able to expand their research capacity on a sustainable basis.

- 3.8 Another source of income has been through the Ten-year Science and Innovation Investment Framework. Since 1999, over £2bn has been allocated through the Joint Infrastructure Fund and the SRIF to build up universities' research infrastructure across the UK.<sup>11</sup> In the three SRIF rounds to date, the University has been granted £44.7m to fund structural improvements to the campus. Projects funded have included expansion of the mathematical and biological sciences, the purchase of a 700MHz Spectrometer, significant expansion of our computing infrastructure and research capacity, and the development of the Warwick Digital Laboratory.
- 3.9 Government policy on research funding emphasises the support of world-class research. The Research Assessment Exercise operated by HEFCE is designed to identify excellence, with an increasing concentration of state funds in the best departments.<sup>12</sup> This trend is certain to continue.
- 3.10 In addition to increased investment in research and infrastructure, the Government expects universities to play a vital role in expanding opportunity and promoting social justice. The Government wants to raise academic standards and the skills of the workforce by widening the demographic base from which students are drawn, with a target participation rate of 50% of 18-30 year olds. It also is seeking to expand the numbers of non-EU overseas students – the Prime Minister's Initiative on International Education involves a drive to recruit an additional 100,000 overseas students by 2011.<sup>13</sup>
- 3.11 The Government's commitment to expand the sector is reflected, for example, in the March 2006 announcement of the allocation of recurrent funding to institutions for the academic year 2006/07. This showed an increase of 6.3% for

---

<sup>11</sup> *The Ten-Year Science and Innovation Investment Framework Annual Report, 2005* (July 2005)

<sup>12</sup> 'The main purpose of the Research Assessment Exercise (RAE) is to enable the higher education funding bodies to distribute public funds for research selectively on the basis of quality. Institutions conducting the best research receive a larger proportion of the available grant so that the infrastructure for the top level of research in the UK is protected and developed.' Higher Education and Research Opportunities in the UK website: <http://www.hero.ac.uk/rae/AboutUs/>

<sup>13</sup> *Times Higher Education Supplement*, 21 April 2006

growth in teaching, 7.3% for growth in research and an 8.5% increase in funding for earmarked capital.

- 3.12 The Government has placed particular emphasis on business-university collaboration in the area of the knowledge-based, high-tech, innovative industry and commerce which is at the heart of the UK's economic strategy. Its Science and Innovation Investment Framework 2004-14 explicitly confirmed scientific research and innovation as the twin engines of economic growth and an improved quality of life with universities being central to the creation of long-term, sustainable employment in new kinds of businesses. This policy reflects the need to maintain and strengthen the UK's competitive position in an increasingly global economy.
- 3.13 Government policy is founded on the belief that, in an era of globalisation, countries will increasingly derive competitive edge from the speed with which they innovate and that there is a proven link between innovation and increases in productivity and economic growth. The Government's aim is to ensure that the UK's economy thrives through its ability to translate the highest quality research into new products and services. It believes that the impact of public investment in science on the economy will be maximised through increasing innovation.
- 3.14 Support for knowledge transfer and commercialisation of research from universities in England is being enhanced through the development of a more predictable, metrics-based allocation process for the Higher Education Innovation Fund (HEIF) from 2006. Investment in regional science and innovation by Regional Development Agencies (RDAs) is set to reach £360 million in 2005-06, and the RDAs are playing a leading role in facilitating links between the research base and business, most recently through the development of Science Cities and Regional Science Councils.
- 3.15 The Government wants to ensure that there is a strong supply of scientists, engineers and technologists to ensure the sustainability of the research and business bases. It is determined to implement measures to improve the teaching and learning of science, technology, engineering and mathematics

(STEM) subjects at all levels and emphasises the need for highly qualified graduates.<sup>14</sup>

- 3.16 The Government is also keen to generate greater confidence and increased awareness across UK society in scientific research and its innovative applications.

### **Regional Policy Objectives**

- 3.17 Government policy asserts that economic competitiveness and improvements in the quality of life depend on the effectiveness of knowledge sharing between business and higher education and that optimal knowledge sharing depends on universities being embedded in their regional economies with close links to the agendas of the Regional Development Agencies.

- 3.18 The Regional Development Agency for the West Midlands, Advantage West Midlands (AWM), has the vision for 2010 that:

*“The West Midlands [will be] recognised as a world-class region in which to invest, work, learn, visit and live and the most successful in creating wealth to benefit all of its people.”*

- 3.19 AWM’s strategic document “The West Midlands Economic Strategy and Action Plan 2004 – 2010” sets out the following objectives:

- develop a diverse and dynamic business base;
- promote a learning and skilful region;
- create the conditions for growth; and
- regenerate communities.

- 3.20 In 2005 AWM established the Innovation and Technology Council, whose members include leading figures from business and academia, with the aim of providing an important forum for the exchange of ideas between the region’s academic and business communities and of advising on investment decisions in technologies and their exploitation. The ITC has identified five areas of

---

<sup>14</sup> ‘Science and Innovation Investment Framework 2004-14: Next Steps’ (March 2006)

potential growth in the region: medical technologies, digital media, advance materials, transport technologies and energy and has begun to fund projects aimed at stimulating collaboration.

3.21 An updated Regional Economic Strategy (WMES) is currently in the process of preparation and the importance of the Region's universities is recognised and acknowledged throughout. The WMES recognises the value of graduates to the regional economy and the need to enhance links between business and academia, particularly in relation to innovation.

3.22 Under the 'Business' theme the 'Exploiting Knowledge' section identifies two important objectives which the growth and expansion of the University of Warwick will contribute.

- The 'Investing in high value skills' objective aims to increase the number of people with graduate level skills employed in the West Midlands economy by up-skilling the current workforce and recruiting and retaining more people with the skills needed to develop and deliver higher value added products and services. The WMES recognises that the region's private sector needs to rely upon and utilise greater amounts of graduate level skills. The WMES states that:

*"A further 160,000 people with graduate level skills need to be employed or self-employed in the West Midlands, particularly in the private sector. The region needs to encourage greater numbers of the graduates produced by our universities to stay and work in the West Midlands and to stimulate a stronger flow of graduate level skills from within the workforce."* (p.35, WMES, Consultation Draft, May 2007)

- The 'Exploiting regional knowledge assets' objective aims to take the West Midlands to forefront of intellectual property development and the commercialisation of opportunities generated by the region's research institutions and businesses. It recognises that the region has a strong research and development base within its universities, hospitals and other public sector institutions as well as its businesses and private sector R&D facilities, but generally poor levels of investment in R&D. It states that improved knowledge exchange demands focused attention on finance for

R&D, support for businesses to commission and exploit knowledge-based innovation, a commitment to design and Intellectual Property creation and encouragement for increased spin-out and licensing.

3.33 This objective includes an 'indicative action' to promote the region's knowledge base to businesses through an improved gateway to university expertise, which increases the volume and quality of SME engagement and better promotes our knowledge assets externally. It also seeks to increase the volume of collaborative business-led research and development through Science City demonstrator activity, Knowledge Transfer Partnerships and business networks to support knowledge and staff exchange.

3.34 In delivering these objectives, the WMES identifies three primary areas for spatial focus: (1) areas of multiple market failure and disadvantage; (2) concentrations of knowledge assets; and (3) the City of Birmingham. Clearly the second spatial focus is relevant as it acknowledges that there are parts of the region where knowledge assets - research institutions, Higher Education Institutions, research intensive businesses and suitable property opportunities - are concentrated. The WMES recognises that there are important opportunities to build on and exploit in these areas. The areas are principally recognised in the three High Technology Corridors. The University of Warwick falls within the Coventry/Solihull/Warwickshire HTC.

## 4. WARWICK AND THE REGION

### Economic Impact of the University

4.1 With an income in 2005-06 of £310.6 million, the University of Warwick is now a major business enterprise. Estimates have put the University's total contribution to the regional economy of nearly £500m a year.<sup>15</sup>

4.2 The key elements of this are:

- University employees: the University employs nearly 5,000 permanent staff and a further 7,500 temporary or project staff; most of these employees live in Leamington Spa, Kenilworth, Warwick and Coventry, purchase goods and services in those towns, and support local activities. In addition, many more local people are employed in companies on the Science Park, and its satellite innovation centres at Binley, Warwick and Blythe Valley
- Students: there are now nearly 16,000 FTE students at the University, a large proportion of whom live off campus in Leamington Spa, Kenilworth or Coventry; all of these, plus other students who shop or socialise in the towns, contribute to the local economy – and many of their local entertainment venues, catering establishments and shops will rely on student custom. It is estimated that, on average, each of our 4,000 international students contributes between £5k and £10k to the local economy
- University purchases of goods and services from local suppliers
- Knowledge transfer: the University has a massive influence on local businesses through its collaborative ventures and knowledge transfer activities.

### Warwick Research and the Region

4.3 The University's research has always had close links to the economic and cultural life of the region and its immediate environs. Since 1965, there has been a close relationship with manufacturing industry, particularly the automotive industry. Today, the University is home to the International

---

<sup>15</sup> 'The Economic Impact of UK Higher Education Institutions', Universities UK, May 2006

Automotive Research Centre and the Premier Automotive Research and Development programme. PARD was established with the financial assistance of Advantage West Midlands through their single biggest investment at that time of nearly £40 million. PARD is working with companies in the premier automotive supply chain to support process and product development in one of the most demanding industries in the world.

- 4.4 The University's internationally renowned Warwick Manufacturing Group is one of Europe's leading manufacturing groups and is involved in publicly and privately funded research on innovation in products and in manufacturing processes, with a focus on research, development and application of new approaches for a wide range of industrial sectors. It helps local, regional, national and international businesses realise their full potential by applying state-of-the-art business processes, methodologies and technology.
- 4.5 Additionally, the University's 55 specialised research centres and institutes, covering subjects as diverse as fluid dynamics and primary healthcare, provide a valuable knowledge base, which local companies and organisations can access.

### **Training a High Quality Local Workforce**

- 4.6 Warwick is a major influence in the West Midlands and in the sub-region of Coventry and Warwickshire. Every year, thousands of students graduate from the University and many of them decide to stay in the local area and occupy key jobs in local businesses and other organisations. The entrepreneurial culture that exists within the University's academic departments means that students graduate with appropriate business skills.
- 4.7 The world-renowned Warwick Business School, in particular, trains graduates capable of managing leading businesses and provides high quality management training for executives in local companies.
- 4.8 The University's graduates directly impact on the quality of life locally because they occupy important and much needed roles in the public services - as teachers or social workers, for example. In the summer of 2004, the first cohort

of students graduated from Warwick Medical School, and many began working as doctors in the community.

### **Warwick as a Regional Home for National Agencies**

- 4.9 Warwick's standing as one of the country's leading universities, the excellence of its facilities and our location at the heart of England have all contributed to the University's success in attracting national agencies to the campus. We are proud that the Government has decided that the University of Warwick should be the home for three independent agencies in the education and health sectors. We are also pleased that our success raises the region's profile in addition to the economic benefits the agencies bring to Coventry and Warwickshire.
- 4.10 In March 2005, the Health Minister, Lord Warner, announced that the **National Institute for Learning, Skills and Innovation (NILSI)** would be based at the University saying that a wide range of alternative locations had been considered and that the Warwick campus site best met the needs of the NHS. NILSI, an England-only Special Health Authority, is supporting the NHS and its workforce in accelerating the delivery of world-class healthcare by identifying and encouraging innovation and developing the capability of the NHS.<sup>16</sup>
- 4.11 The Government has also decided that the **NHS Centre for Involvement** will be housed at the University. The Department of Health stipulated that the Centre should be run by a group with experience in patient and public involvement and with good networks. The successful bid came from a consortium made up of The University of Warwick, The Centre for Public Scrutiny and the Long term Medical Conditions Alliance. The RCPPI will promote the value of involving people in the running of local health services and will work with NHS organisations, staff and patients to build on the foundations of involvement that are already in place in many parts of the country.<sup>17</sup>

---

<sup>16</sup> Department of Health Press Release 2005/0144, 30 March 2005

<sup>17</sup> Department of Health Press Release, 2006/0189, 24 May 2006

## 5. RESEARCH AT WARWICK

### Our Record on Research

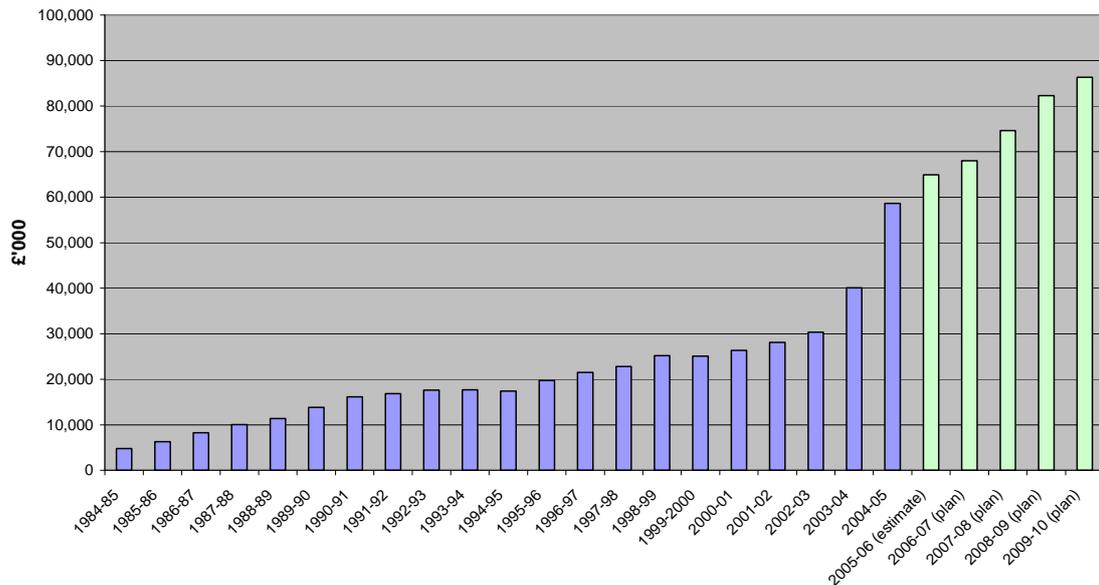
- 5.1 Our research is excellent, innovative and ambitious. In the last five years, the quality of our research can be judged by the fact that we have more than doubled our research income to £58m.<sup>18</sup> The University plans to double research income again over the next 7-10 years.
- 5.2 The growth in research income has been achieved in two main ways. First, through the increasing success of our researchers in securing funding from standard funding schemes. In respect of applications to Research Councils, for example, we have a success rate which is comparable with Cambridge and Edinburgh Universities which score the best results of the Russell Group of research-intensive universities.<sup>19</sup> This growing stream of income results in a steady, underlying rate of growth in research capacity and teaching opportunities.
- 5.3 The generation of research income has also been driven by our success in “opportunistic”, or one-off, competitions to establish major new interdisciplinary research centres. Warwick has won three ‘Science and Innovation Awards’, more than any other university, in diverse areas of study covering fusion plasma physics, in statistics at the interface between mathematics and computer science and the fundamentals of operational research. These awards alone are worth £13m and will, we expect, generate further funded activity. Collectively, the three projects involve cutting edge, interdisciplinary research, high quality doctoral training and significant knowledge transfer opportunities to industry and other users. They are seen by the Government as major capacity-building initiatives that will underpin the UK’s excellence in research, secure the continuing good health of the disciplines and ensure that UK research remains at the forefront internationally.
- 5.4 The evidence proves that Warwick’s capacity to carry out research is on an upward trajectory, as shown in the table Income Analysis below.

---

<sup>18</sup> *Statement of Accounts for the Year Ended 31 July 2005*

<sup>19</sup> ‘Research Council Success Rates’, *Research Fortnight* 22 March 2006

### Income analysis



5.6 Our excellent researchers are carrying out very high quality work and are winning funding to develop their investigations further. Their success means that the University will continue to attract students, especially postgraduate students, who want to train and work with the very best academics in their fields. This is increasingly important in the emerging globally competitive Higher Education sector. Furthermore, the benefits of Warwick's research will be translated into increased economic and cultural wellbeing nationally, regionally and locally.

5.7 Our strategy for research at Warwick is based on our past and current successes. We wish to create a campus which supports high-impact research in novel fields of scientific interest and where the results of this work can be translated into products and services that improve the health and economic well-being for people and businesses internationally, nationally, regionally and locally. We now have the opportunity to create a university which rivals the best research institutions in the world. We will do this by developing a campus which:

- offers the very best facilities and environment for research
- is a place at which researchers at all stages of their careers want to live
- is capable of meeting the demands placed upon it by Government, students, business and industry and local communities

- is a vibrant campus – intellectually inspiring, architecturally challenging, socially exciting

5.8 Warwick has to respond quickly to emerging priorities and new fields of enquiry if it is to take this opportunity to develop as a world-class institution. Experience shows that the expansion of scientific knowledge opens up new areas of research, especially as advances in single disciplines generate new opportunities for interdisciplinary investigations. For instance, advances in sophisticated analytical and computational techniques have led to an explosion in the understanding of genetics and has promoted the development of specialist fields of mathematics, statistics and computer science. In turn, these developments have led to important new research in the area of Systems Biology. Warwick is home for one of a small number of research centres working in this area. The University is also one of the leading UK centres in Complexity Science, which focuses on understanding, controlling and designing complex systems such as climate, epidemiology, finance, health, production processes and transport.

5.9 Warwick's expertise in space and astrophysical plasma research is the basis for the development of a new centre of excellence, in collaboration with the Culham Science Centre, in fusion plasma physics. Established in March 2006, the centre will increase our understanding of the hot plasmas required to sustain nuclear fusion as a contribution to the grand challenge of harnessing fusion power as a source of 'clean' energy. Such developments are not restricted to the physical sciences, as researchers from the Faculties of Arts, Social Studies and Medicine collaborate under the auspices of the Centre for the History of Medicine.

5.10 The campus will be designed to offer positive encouragement to the development of innovative interdisciplinary research centres. The University will encourage collaboration between all sections of our academic community by building a campus which will have the flexibility to allow for the co-location of researchers who need time and physical proximity in which to discuss and develop their ideas. Integral to this component of our 'knowledge community' will be social spaces in which scientists can meet informally to discuss their work and facilities, modelled on our successful student **Learning Grid**, where they can develop ideas in groups using state-of-the-art equipment. In order to

ensure that our new research ideas are of the very highest standard, we will encourage the involvement of experts from other UK universities, and from overseas, by providing high-quality accommodation so that they can stay, for possibly lengthy periods, on campus to work closely with Warwick's experts. Finally, we will develop flexible-use, high specification research facilities to meet the research challenges of the future, many of which cannot be predicted.

5.11 Warwick's reputation for dynamism is also based on its ability to respond effectively to demands from other quarters. As climate change focuses the world's attention, our traditional expertise in transport research has been extended to encompass the discovery of energy efficient technology. Warwick is also in the vanguard of research and teaching on globalisation. Our research in this area is concentrated in the **Centre for the Study of Globalisation and Regionalisation**, which is the largest centre of its kind in Europe, and the **Warwick Business School**, the growth of which is partly accounted for by its expanding teaching programmes for the business people who will operate in the 'globalised' business world. Our capacity to maintain flexibility in our research portfolio depends to a great extent on having a campus which provides us with the space to expand and the ability to re-configure existing facilities.

5.12 Warwick has a record of developing its research and teaching capacity into new areas. In 2000, the University fulfilled its long-held ambition to establish a Medical School. The **Warwick Medical School** now has the largest graduate entry of any Medical School in the UK. With brand new teaching and research facilities at the University Hospitals Coventry and Warwickshire NHS Trust site, its priority research areas are diabetes and cardiovascular disease, reproductive medicine, primary care and health services research. In 2004, **Warwick HRI** was established after the integration of Horticultural Research International with the University. Warwick HRI is the principal UK organisation tasked with carrying out horticultural research and development and transferring the results to industry and is recognised for the excellence of its science, undertaken by interdisciplinary teams of world-class scientists. Warwick will continue to expand its research into new areas on the basis of detailed planning and the future sustainability of its operations.

## **Future for research**

- 5.13 As was noted in the section on national policy, the Government's commitment to expanding the sector is reflected in the increased allocation of recurrent funding to institutions for the academic year 2006/07. Warwick needs to be in a position to secure as much of the expanded resource possible. Given the growth in overall research monies at present of approximately 8%, Warwick has to achieve growth of more than 10% to be sure of growing our share of the overall research pie. If Warwick does not achieve this, our share will effectively shrink.
- 5.14 Warwick's future as a world-leading research institution will depend on its success in fostering and supporting interdisciplinary research. Our experience in building innovative research centres like those in Systems Biology and Complexity Science, which span traditionally separate academic disciplines, shows us that the campus must be designed to encourage interactions between experts from different disciplines and that it must have the flexibility to meet research challenges in as yet unforeseen areas of study. These centres, which are pioneering new methods of working, originated because researchers identified links between their own work and that of others, both within and beyond the University, and as a result of their ability to bring together varying methods and styles of working. Geographical proximity was also an essential prerequisite for the establishment of new relationships between researchers and their ability to develop new methods of working. Crucial to the establishment of the research centres has been the determination of researchers to overcome the barriers to communication inherent in discipline-based organisational structures. Also, they have adapted existing facilities built to support traditional research activities to meet the demands of these innovative research centres.
- 5.15 Although it is difficult precisely to predict how our research will develop in the long-term, we can say with some degree of certainty how some of our major research areas will develop in the short- to medium-term. For example, we are planning for significant growth in our health-related research. The co-location of the Warwick Medical School's Health Sciences Research Institute and the Department of Biological Sciences at the Gibbet Hill campus has resulted in close collaboration between the two units. Substantial and consistent growth is

anticipated in research groups engaged in interdisciplinary research. A further impetus for growth in this area comes from the Government's announcement of a £1bn pa fund for health research,<sup>20</sup> which will lead to increased opportunities for funded research.

5.16 In 2005 AWM established the Innovation and Technology Council, with the aim of providing an important forum for the exchange of ideas between the region's academic and business communities and of advising on investment decisions in technologies and their exploitation. The ITC has identified five areas of potential growth in the region: medical technologies, digital media, advance materials, transport technologies and energy and has begun to fund projects aimed at stimulating collaboration. These are all areas of real potential strength for the University of Warwick.

5.17 The Birmingham Science City initiative is directed at generating enhanced economic growth through significant investment in research infrastructure and new opportunities for knowledge transfer between the region's universities and industry. The Government is committed to the success of the Science Cities initiative. In a recent speech, Lord Sainsbury of Turville, the Under Secretary of State for Science and Innovation, highlighted the need for a supportive planning environment as one of the key issues facing those involved in the project. He said it was:

*'vitaly important that local planners understand the dynamics of science cities. The planning regime needs to create the right environment for new jobs. When Vice Chancellors want to extend their campuses ..., planners ought to be rushing to help rather than raising objections.'*<sup>21</sup>

5.18 Warwick has embarked on a major capital investment programme funded by Advantage West Midlands (AWM) in three areas of strategic regional importance: energy, advanced materials and translational medicine. As a consequence of this investment there will be a significant expansion of research, development and demonstration activities over the next decade.

---

<sup>20</sup> 'Science and Innovation Investment Framework 2004-14: Next Steps' (March 2006)

<sup>21</sup> Lord Sainsbury, Science Cities Event, 24 May 2006  
(see <http://www.dti.gov.uk/pressroom/Speeches/page29445.html>)

- 5.19 Detailed planning for the Birmingham Science City, which involves an estimated total investment of between £60m and £80m, has only recently begun with the energy theme the most advanced. With an initial estimated capital investment of some £5m, we will almost quadruple the number of researchers working in this area over the next five years to 46. An important component of the planned activities will be demonstrator units designed to evaluate and showcase new energy technologies. This expansion in activity will require new facilities, including a possible new-build research centre, and specialised facilities to house the demonstrator units, which will require a high degree of flexibility given that the technology demonstrators will change from time to time.
- 5.20 Similar levels of expansion are anticipated in the advanced materials theme – a potential trebling of current staff and student numbers all requiring laboratory, office and meeting space.
- 5.21 The requirements for the translational medicine activities (the branch of medical research that attempts to more directly connect basic research to patient care) have yet to be fully detailed. However, they will add to the already predicted growth in the Warwick Medical School and we are studying the options for accommodating that growth. This research theme is highly interdisciplinary and will draw in researchers from Mathematics, Statistics, Biological Sciences and Engineering. Of the three themes, translational medicine may be the one where growth in terms of researchers and new facilities is the greatest.
- 5.22 Beyond the potential for growth provided by the Birmingham Science City initiative, we foresee the expansion of the physical science research we carry out. Currently, the Faculty of Science is generating the fastest growth of any of our faculties with the most recent figures showing research income rising by over 28 per cent. Within the Faculty, there are a number of cutting-edge research projects under development, including a proposal for a Centre for Non Linear Mathematics which would span both pure and applied mathematics. Our scientists are also planning to establish an interdisciplinary centre of excellence in Renewable Energy, which would dovetail with the Science City energy theme and would have a very high academic profile. A further interdisciplinary project between chemists and statisticians in the area of physical organic chemistry is being developed.

- 5.23 There are exciting developments underway in the social sciences and humanities at Warwick. The Warwick Business School is currently expanding into new purpose-built accommodation as part of its vision to challenge the world's leading business schools. Its aim of becoming one of the very best business schools will have important reputational benefits for the University and the region. In the humanities, our plans to expand research capacity have resulted in successful bids for Academic Fellowships to the Research Councils UK scheme, which are allowing us to overcome some of the obstacles to research in our smaller departments. Current developments are part of a long-term strategy to which the University is fully committed.
- 5.24 There is significant and developing collaboration between researchers in the social sciences and humanities. Our vision includes the development of an interdisciplinary research centre in which are based major research projects and a postgraduate training centre. Given current limitations on space, and to emphasise the uniqueness of the enterprise, we would expect that the combined research and training centres would be housed together in a new building.
- 5.25 Our ambitions also include greater collaboration with external cultural organisations. With the Warwick Arts Centre being the largest facility of its kind outside London, we already have close links between research into, and the practice of, performance and visual arts. The recent establishment of the CAPITAL Centre, a performance partnership between the University and the Royal Shakespeare Company presages further stimulating joint ventures with regional and local organisations. Just as our scientists work with businesses in the region, our arts researchers and social scientists have close links with regional and local government, businesses, public bodies and cultural organisations and will be developing these relationships in the future to the benefit of the region.
- 5.26 Warwick's ambitions to be at the cutting-edge of technological developments embrace interdisciplinary research spanning the sciences and arts. In particular, we are keen to develop the potential of digital media. We believe that considerable possibilities exist in the convergence between new digital media and content. With particular strengths in historical, literary, performance and

visual cultures we foresee great potential for the University to be a world-leader in the development of systems which promote the accessibility of information.

- 5.27 Warwick's development into a world-leading research university will involve collaborations with key global players. The University has staff and students from over 100 countries working and studying on campus, and with offices and representatives in the USA, India, China and South East Asia. In an increasingly competitive global research and education environment the University has been placed in the top 100 of global Higher Education Institutions,<sup>22</sup> the highest rated university in the Midlands.
- 5.28 To further an established and expanding global reputation the University will be working with Government, through the Global Science and Innovation Policy to enhance research links with the USA and emerging economies such as China and India. This includes, but is not limited to UNESCO and NATO programmes; the Dorothy Hodgkin Postgraduate Awards Scheme, which supports researchers from developing countries to come to Warwick to carry out doctoral research; Science and Innovation Bridges to the USA and the UK-India Education and Research Initiative. The future internationalisation of research collaboration forms a major element of Government policy, and Warwick will continue to expand its international presence and activities in support of these national objectives.
- 5.29 In a European context, the University has continued to work successfully on European Union funded Framework Programmes on collaborative research. The forthcoming programme, Framework Programme 7 (2007-2013), will be the largest scheme yet for trans-national collaboration and will offer the opportunity to further international research links and reputation with EU Member States, Accession Countries and countries, such as Russia, which have entered into agreements with the EU.
- 5.30 The realisation of our vision to be a world-leading research university means that Warwick will become a national and international centre for postgraduate training. This will apply particularly in the physical sciences but will also be true in the social sciences and humanities. We expect to attract the highest quality

---

<sup>22</sup> Times Higher Education Supplement, 2005

young researchers to our world-leading research centres. Our goal will be to provide these researchers of the future with the very best training and facilities in which to develop their skills.

5.31 Warwick has recently been successful in obtaining funding for several interdisciplinary postgraduate training programmes in science, including the Molecular Organisation and Assembly in Cells (MOAC) Doctoral Training Centre (DTC). We have led the way in providing space and facilities for doctoral training; our successful MOAC DTC has built a “community” of doctoral trainees through the provision of social amenities in addition to having its own teaching and work spaces for students. MOAC’s students receive training in a wide range of transferable skills as well as in the scientific skills which will enable them to master the complexities of modern interdisciplinary scientific research. The University has the ambition to establish itself as the national centre for interdisciplinary mathematical and scientific postgraduate training.

## **Doctoral Training Centres: A Case Study**

The University of Warwick's success as a leading UK research institution has resulted in it becoming a major centre for interdisciplinary postgraduate training in the sciences. By 2007-08, it will be hosting three Doctoral Training Centres with a combined annual intake of 30 students and it will be a partner in a Masters Training Centre.

Since its establishment, in 2003, the Molecular Organisation and Assembly in Cells Doctoral Training Centre (MOAC DTC) has developed an innovative four-year interdisciplinary degree programme at the interface between mathematics, chemistry, biology, physics and computing. The training is designed to equip students to deal with the problems and challenges in each of these fields in order to bridge the gap that exists between the individual disciplines. More recently, Warwick has been chosen to open new interdisciplinary DTCs in Systems Biology (opening in 2006-07) and Complexity Science (2007-08). The Systems Biology DTC has been funded by a £3.4M grant from the Engineering and Physical Sciences Research Council (EPSRC) and the Biotechnology and Biological Sciences Research Council (BBSRC). The University has also made a significant investment in the centre. The Centre is an independent unit within Warwick University providing training in the multi-disciplinary skills required for research into biological systems and will be managed by senior academic staff from a mix of life sciences and physical sciences departments.

The EPSRC has also recently awarded the University of Warwick £4.14 Million to establish a DTC in Complexity Science to train a new generation of complexity scientists at PhD level, teaching knowledge and skills to understand, control and design complex systems, and to do innovative research in complexity science via critical thinking, interdisciplinary teamwork and end-user interaction. The award includes 31 PhD studentships and initial funding for three lecturers, and comes on top of Warwick's recent success in gaining six RCUK Academic Fellowships in Complexity Science. A wide range of departments are involved including Maths, Physics, Computer Science, Chemistry, Engineering, Psychology, Statistics, WBS, WMG, and WMS.

In addition to EPSRC's major commitment, further support comes from Land Rover, British Antarctic Survey, RAND Europe Ltd, IBM UK Ltd, Hewlett-Packard Ltd, Dept of Health NCCRC, the NHS Inst for Innovation and Improvement and UK MetOffice

Combined, the work of the three DTCs will make a major contribution to training the next generation of scientists and securing the UK's research base.

The explosion in Warwick's interdisciplinary research training programmes has led the University to consider how best to improve and expand its training provision. Warwick is considering setting up an Interdisciplinary Science Graduate Training Centre as a focus for, and to manage, all of its interdisciplinary training programmes with the aim of allowing the structured provision of transferable skills training programmes, and providing maximum flexibility in the delivery of integrated masters and doctoral training. These changes will also benefit students taking departmentally-based postgraduate training courses.

The interdisciplinary DTCs are evidence that success in research has benefits in other areas. It establishes a reputation for excellence that leads to investment in training improvements which, in turn, increases research capacity at the training institution.

- 5.32 We are currently developing other initiatives based on the MOAC model in the knowledge that Research Councils, and the Government, are increasingly looking to fund capacity-building postgraduate training.
- 5.33 We are keen to establish a postgraduate training centre in one or two specially designed buildings. This would allow us to promote the interdisciplinary aspects of our training through the provision of common social and teaching spaces whilst allowing each separate DTC to have its own administrative and academic office space so as to preserve its unique identity. We believe that these arrangements would prove to be very attractive to potential students.
- 5.34 Each of these areas of growth is resource-hungry and will place significant demands on space. In addition to the need for laboratories and space to house equipment, we would expect an increased need for teaching space as our cutting-edge research attracts both postgraduate and undergraduate students.
- 5.35 The University of Warwick's campus of tomorrow will be focussed around its world-leading research. Our vision is the creation of a campus suffused with intellectual excitement at which the most gifted researchers and students challenge the boundaries of human knowledge. To achieve this we need to make a step change in our capacity to carry out research and we must continuously improve the quality of our research.
- 5.36 This vision will require significant investment, not least in our research infrastructure. We wish to develop a campus with state-of-the-art facilities and where researchers live and work in high quality accommodation and laboratories. Our aim is to create a dynamic and agile research community with facilities capable of adaptation to meet unforeseen challenges. Our campus for tomorrow will be a place where ideas become economic, social and cultural realities to the benefit of humankind.

## 6. TEACHING AT WARWICK

### Student Numbers

- 6.1 In common with other Russell Group institutions, the last ten years have seen significant growth in student numbers at the University of Warwick. This growth has been a key contributor to the success of the University, ensuring critical mass in teaching and research, supporting financial sustainability, and promoting the University's reputation within the UK and overseas.
- 6.2 Since 1996/7 overall student numbers have grown from 17,507 to 29,793 in 2004/05, with a total growth of 58.8%. Growth has developed at different rates in different provision over this period:
- Full-time undergraduate numbers have risen by 27%;
  - Part-time undergraduate numbers over the same period have grown 254% (an annual rate of around 35%);
  - Full-time postgraduate students have increased by 42%;
  - Part-time postgraduate students have increased by 49%;
  - Undergraduate overseas student numbers have increased by 67%;
  - Postgraduate overseas student numbers have increased by 77%.
- 6.3 This level of expansion has made a positive contribution to the successful development of the University in the last decade, but has also brought challenges. 1300 additional on-campus bedspaces have been created since 2000 as the growth in full-time home and overseas students has created substantial demand. The integration and management of privately owned off-campus accommodation has become increasingly important to ensure that the University can respond to the growth and support the planning and development of the rental market in line with expected demand.
- 6.4 Warwick has benefited from the significant growth in overseas students over recent years and our international population rose to over 4,000, the biggest in the country. This has brought the challenge that, in order to remain attractive, we need to make sure there is a more balanced experience in university residences. For example, the consequence of the University's current

guarantee to provide all overseas students with accommodation on campus is that some postgraduate residences have high proportions of overseas students living together. This in turn means they do not get the experience they hoped for when they came to live in England. Through the proposed expansion, it would be possible to provide more accommodation for Home and EU students, thus providing more balanced student communities. It is envisaged that all undergraduate students who wished to do so would be accommodated on campus, along with the majority of postgraduate taught students.

- 6.5 Student numbers are forecast to grow over the coming decade, but at a much slower rate and in different areas to those experienced in the last decade. The strategy for forecast growth for undergraduate home/EU numbers is for slow growth of about 0.5% per annum. This growth is in response to new areas of delivery, government policy in areas of skills shortage, and to ensure the University can continue to contribute to widen access to under-represented groups in an increasingly competitive application environment for students to study at Warwick. This is much reduced growth compared with the previous 10-15 years, in part due to government restrictions on areas for growth, but also a strategic move by the University as its priority for growth is in the areas of postgraduate and part-time study. For overseas undergraduates, growth is slightly higher, but at a much lower rate than previous years in order to ensure that the undergraduate environment is a balanced community, at 1.25%. By 2020 this would lead to an increase in approximately 980 undergraduate students.
- 6.6 More significant growth is in postgraduate and part-time provision, in line with national strategic priorities for flexible delivery and employer engagement<sup>23</sup> and the University's strategy for development of the research environment and Continuing Professional Development and Knowledge transfer.
- 6.7 Warwick also needs to consider its strategic and competitive position both nationally and internationally. Compared with its closest competitors in the Russell Group in the UK, Warwick has a relatively low proportion of postgraduate research students. With an increasing focus at national level of selective funding in research, alongside Warwick's targets for research income

---

<sup>23</sup> HEFCE's commitment to supporting both greater engagement with employers and increased flexibility in provision to support lifelong learning is set out in their strategic plan 2006-11

growth, the University aims to increase postgraduate provision by 1100 by 2020 based on strategic growth of 10% per annum. The University is forecasting an increase of 1900 full-time postgraduate taught students by 2020, on the basis of 2% per annum, and part-time students (who would be taught on campus, but not accommodated on campus) are forecast to grow by 500 students by 2020.

- 6.8 Much of this part-time growth will be achieved without adding significant additional pressure to the Warwick campus site. In line with national higher education strategy, the University has developed, and continues to develop, new methods of delivery via distance and electronic delivery and has expanded direct delivery in markets elsewhere in the UK and overseas. There are a number of highly successful examples of these kinds of innovation, particularly in the vocational and professional areas of provision (engineering, business, health and education). As new overseas markets grow and overseas governments encourage more direct delivery, student number growth will occur in those areas.
- 6.9 However, Warwick has always set stringent standards to ensure that these innovations are of high quality and are well integrated with existing activity, draw extensively on our own Warwick-based staff and usually involve at least some of the period of study based at the Warwick campus. Any such development and expansion of this kind of activity must contribute to the overall vision and strategic objectives for the University, in relation to excellence in teaching and research both nationally and internationally. The impact in terms of campus expansion will therefore largely be in relation to recruitment of additional staff based at Warwick (with associated accommodation needs) and sufficient flexibility in teaching and residential accommodation areas.

## 7. ENTERPRISE AND INNOVATION

- 7.1 The University has a strong tradition of working in collaboration with business and industry and of playing an active role in national, regional and local economic life. Warwick's record of achievement has been recognised at the highest levels – in 2001, the Prime Minister described the University as '*a beacon among British universities for its dynamism, quality and entrepreneurial zeal.*'<sup>24</sup> It was praised by the Government's Lambert Review in 2003 for its close and effective work with business and industry, and Warwick was described as 'one of the most entrepreneurial universities in the country'.<sup>25</sup>
- 7.2 The strength of the University's regional function has enabled it to expand its links with organisations and individuals. This is particularly the case with the Science Park's contribution to regional economic regeneration. Since its inception in 1984, the Science Park has provided help to more than 700 technology-based companies in the locality.
- 7.3 The University of Warwick is committed to maximising the commercial application of its research to benefit the national, regional and local economies. To this end the University created Warwick Ventures which spearheads this mission through patenting, licensing and creating spin-off companies based on selected research innovations. More than a dozen companies are already trading and the University has an excellent portfolio of more than 50 patents and patent applications, many of which are licensed to companies in the UK, Europe and the US. Challenging targets have been set to increase the level of technology transfer activity, with the intention of creating at least ten new spin-off companies a year.
- 7.4 The University has a portfolio approach to Enterprise and Innovation which reflects the broad strengths and capabilities of the institution. At the core of the strategy is the intention to maximise benefit to the sub-region, region and the UK in terms of direct and identifiable benefit and indirect economic and social benefit. Further, the strategy seeks to embed activities within the University and

---

<sup>24</sup> Rt Hon Tony Blair MP, Prime Minister, 4 January 2001

<sup>25</sup> 'Lambert Review of Business University Collaboration', December 2003

with key stakeholders, and to move towards continuity and sustainability of activities allowing new approaches to knowledge and technology transfer.

7.5 Current activities include:

- *Technology Transfer and Supporting High Technology, High Growth Companies:* Warwick has a continuing programme designed to support, and encourage the growth of, companies utilising its Intellectual Property. Centred on the creation of spin-outs and licensing, the programme has produced 30 new companies and over 50 new licences since 2000. The Higher Education Innovation Fund (HEIF) will allow continued growth and the development of a sustainable, non-HEIF funded, future. The programme also involves university-business collaborations which give businesses access to scientific facilities and support in their efforts to access finance for growth.
- *Work Experience and Enterprise Education:* Warwick offers enterprise and entrepreneurship education to staff, students and the wider community under programmes established by the Mercia Institute of Enterprise. Students will also be presented with enhanced placement opportunities especially within the West Midlands region – this will have a benefit to both students and employers, especially SMEs, with potential impacts on graduate retention.

7.6 Our approach is based around the close relationships we have forged with regional communities of interest and reflects the views of Lord Sainsbury, the Science and Innovation Minister, who recently said that “*Building strong partnerships between local authorities, Regional Development Agencies, universities, the business community and other stakeholders should be a common focus for regional efforts to promote science and innovation.*”<sup>26</sup>

7.7 In addition to established Knowledge and Technology Transfer activities, the University launched a new two year programme of activities in 2006, including:

---

<sup>26</sup> Second Annual ‘Science Cities’ Summit, 24 May 2006 (DTI Press Release DTI/NW/026/06)

- *Industrial Collaborations*: Through a new series of initiatives the University will expand collaborations with major UK companies. This will include enhanced communications with partners and a staff exchange programme
- *Warwick Digital Laboratory*: A major new Warwick Manufacturing Group initiative, this will be a unique collaborative Research and Development centre with a focus on the application of digital technology and methodologies to manufacturing, medicine and health and product development. The programme will provide support for staff to enhance partnerships with companies seeking to further develop their capabilities in the digital field
- *Warwick Medical School*: WMS will continue an existing series of programmes, and engage in new activities, which will reach out to health and medical related companies and users/practitioners in healthcare provision
- *Warwick Broadband*: The University has established a pioneering new programme of activity based around a Broadband TV Channel. This will reach out to various communities of interest, including community and public sector groups as well as business and industry. This approach has received support from regional, national and international partners.

7.8 Our vision for the future includes the injection of Research and Development funding from businesses. Our plans to build a world-class science research campus will, we expect, persuade businesses to establish their own research laboratories at Warwick. Independent evidence produced by the Institute for Fiscal Studies has revealed how both UK-based and overseas corporations, especially those in the health and chemicals sectors, will cluster their research facilities around top-rated university departments and we want to have the capacity to house them on our campus.<sup>27</sup>

7.9 Knowledge Transfer Partnerships (KTPs) are an important feature of Warwick's knowledge transfer activities. A Department of Trade and Industry-sponsored initiative, KTPs are designed to increase the sharing, and the exchange of,

---

<sup>27</sup> *The Guardian*, 13 April 2006

knowledge, technology and expertise between the business community and higher education institutions. Over the next 5 years, Warwick plans to double the number of KTPs it runs.

## 8. THE CAMPUS COMMUNITY

- 8.1 The University of Warwick is committed to sharing its resources and facilities with external people and organisations, especially those in the local community. Whilst we are proud of the extent to which the campus is currently used by the public, our campus with the proposed developments would offer greater access and will be a resource of great value to the local community.

### **Current Community Education Activity**

- 8.2 The University of Warwick is committed to providing a wide range of educational opportunities for the local community. Each year, about 6,000 adult learners take the flexible courses offered under our Open Studies and Language for Leisure programmes. Open Studies courses range from archaeology to zoology and, this year offerings include History and Genealogy, Earth Science and Geology, Ancient Languages and Philosophy. Our **Centre for Lifelong Learning** also offers part-time degrees, '2+2 Degrees' and Foundation Degrees. In order to secure the widest possible levels of participation, many of our Open Studies and degree courses are based off-site at colleges and adult education centres in Coventry, Hinckley, Kenilworth, Leamington Spa, Nuneaton, Rugby, Solihull, Stoneleigh, Stratford-Upon-Avon and Warwick. The University's Language Centre offers tuition to members of the public in 15 languages, including the main European languages and Russian, Chinese, Japanese and Arabic. The Centre also provides a wide range of tuition, ranging from individual and small group teaching to short courses for local businesspeople and is the preferred supplier of language teaching to E-ON (formerly Powergen).
- 8.3 The University is also responsive to the specialist needs of professionals, businesses and organisations. Its Continuing Professional Development programmes cover a diverse range of courses, both on and off campus and by distance learning, which are often structured to meet the client's unique requirements. Various qualification levels and delivery options are available to facilitate the transfer of innovative research-based knowledge and leading edge business development to the working world. These range from one-day unaccredited short courses through week long certificates and postgraduate

awards to part-time Masters degrees that can be spread over 8 years. Our Executive MBA is particularly beneficial to local business people as it involves part-time study, some of which is in the evening and at weekends. The University has also developed the innovative Warwick Business School Football certificate for football managers. Between 2003 and 2005, there was a 27% increase in student contact time for unaccredited courses. Also, since these figures were compiled, the University has secured a large number of contracts with corporate and public sector clients regionally and nationally, resulting in a significant increase in part-time and short course provision. Much of the growth in CPD provision has been in the Warwick Medical School, the School of Law, Warwick Institute of Education and Warwick Manufacturing Group.

- 8.4 The University made a successful bid for for the establishment of the new **Network Rail Leadership Centre** in 2005. Network Rail is working in partnership with Warwick Business School and the Warwick Manufacturing Group to deliver a programme of professional skills development including accredited leadership and management courses.
- 8.5 The University is committed to encouraging schoolchildren from traditionally under-represented groups to apply for its, and other institutions', courses, and plays a leading role in the development of aspiration-raising activities in Coventry and Warwickshire. Activities include "Taster Days" for year 11 children and "Family Awareness Days" for year 7 and 8 pupils and their parents/supporters.
- 8.6 Warwick has extensive involvement in Teacher Training Partnerships through the Institute of Education, which places its trainee teachers in 250 primary and secondary schools across the region. Many of these trainee teachers take jobs in local schools after graduation.

### **The Future for Community Education**

- 8.7 On current experience, the University foresees continuing major expansion in the area of 'training the trainers', especially initial teacher training and continuing development for those who will be working in the learning and skills sector. This involves a wide range of partnerships with other local players, FE colleges in particular, but also local authorities, private training providers and

the voluntary and community sector. The University is also working with Coventry University to establish the Coventry and Warwickshire Lifelong Learning Centre, which will bring benefits to local businesses and individuals.

- 8.8 The University expects further expansion of its Continuing Professional Development programmes. Current projections indicate a significant growth of short course provision by 2010. These forecasts are based on the current campus size and research base and would inevitably be affected considerably to the benefit of companies and individuals were the University's research capacity to be increased in the way we are suggesting.
- 8.9 The scale of the University's research capacity has a direct bearing on the size of the University Library, as does the number of students. Warwick's development as a world-leading university will require expansion of our library facilities. Given the physical constraints of the current building, which was designed with print-based research by individual researchers in mind, we would expect any expansion to be accommodated in a new building which would be a multi-purpose digital support facility. The establishment of such an e-Library will be an essential complement to the increasing magnitude of our science research, which disproportionately relies on electronic publications and research data.
- 8.10 Our library facilities are available for use by all adult learners studying at Warwick. In addition, the University shares its library resources with the local community to the greatest extent possible so that the Library is a community resource. Future plans will involve the creation of a public-use Learning Grid, modelled on our student/staff Learning Grid. We will also consider how we could share our facilities with other local education institutions. We will extend the services our Library staff provide to the community, such as research skills training for schoolchildren and adult learners.
- 8.11 Our campus will be designed to promote public understanding of science and will focus on encouraging schoolchildren to be the scientists of the future. Activities to promote science learning might include:
- interactive science exhibitions, which might be themed around health and the life sciences, the study of space, robotics or sustainable energy

- a children's science centre
- greater public access to our research laboratories
- fixed and travelling science demonstrations.

### **Cultural and Sporting Facilities**

8.12 **Warwick Arts Centre**, comprising a concert hall, two theatres, a cinema and the Mead Gallery, attracts around 280,000 visitors a year to more than 2,000 individual events embracing music, drama, dance, comedy, literature, film and visual art. The Arts Centre also takes the arts out into the community, arranging various outreach events for local schools. It is currently running a two-year project called 'Cov Cool Kids' which involves working with more than 3,000 children in 21 primary and special schools and professional artists to make brand new works of art for public performance. The Arts Centre also runs workshops and puts on productions aimed at children, such as its highly acclaimed Christmas pantomime season. In an average year, the Arts Centre Education Department has around 20,000 contacts with students in schools and college in the region.

8.13 The University is home to a significant collection of modern and contemporary art. Since the founding of the University, there has been a commitment to buying works by younger artists that reflect the University's vision to be at the leading edge in all fields and to provide a stimulating and distinctive environment for students, staff and visitors. With pieces located across the campus both in buildings and outdoors the collection is easily accessed and you can often bump into sculptures, paintings and other works just by wandering around. The latest addition to the collection is a dazzling 30-foot shimmering curtain of colour by Turner Prize-nominated artist Ian Davenport in the Zeeman Building. Our collection is on open display across campus and every year a wide range of schoolchildren, groups, societies and individuals visit it.

8.14 The University has extensive, high quality sports facilities, which are amongst the best of any British university. These facilities are available for use by the public and 1,000 local people are members of the **Sports Centre**. The campus hosts a wide range of local sports organisations, including Coventry Godiva

Harriers, who use our running track. Additionally, the Sports Centre is keen to develop relationships with national sports bodies and associations as well as providing quality facilities to staff and students.

- 8.15 Warwick hosts events such as the Greater Warwickshire Youth Games and, in partnership with Coventry City Council, organised the International Children's Games 2005. In the summer of 2007, the University will be a key partner when the UK School Games is held in Coventry, and it is currently scoping out a role in supporting the London Olympics 2012.

### **Warwick Conferences**

- 8.16 The University is a major venue for conferences and training courses and offers the widest choice of meeting space anywhere in the UK. Each year the high quality facilities attract over 4,200 events and 126,400 delegates and the business has a turnover of over £21m. In addition to the purpose-built conference venues, delegates are accommodated in 900 hotel-standard student bedrooms ensuring that the campus is full of life during vacations. During the International Children's Games, Warwick Conferences provided accommodation and catering for hundreds of competitors and officials.
- 8.17 Our conference business trades on the world-class learning environment at Warwick and the international renown of the Warwick Business School. The future development of the campus would enable Warwick to enhance its position as a conference and training venue to the benefit of the region. Warwick Conferences is particularly keen to add purpose-built exhibition space to the facilities they offer potential customers.

### **Working with Community Groups and Charities**

- 8.18 The University plays a leading role in the Coventry Partnership and several of its Theme Groups, and is represented on the Warwickshire Partnership and the Kenilworth Town Centre Partnership.
- 8.19 More than 2000 students are members of Warwick Volunteers, a society which arranges volunteering opportunities in local communities across Coventry and Warwickshire. Students give their time free to help with activities such as

mentoring in schools, running parties for old people, helping with regeneration initiatives, working with refugees and providing free legal advice. It is estimated that Warwick Volunteers contributed about half a million pounds worth of time to community projects in 2006.

8.20 In response to the Business in the Community and Coventry Cares initiatives, the University is encouraging staff to get involved in community projects. A significant number of staff is already involved in the surrounding community, for example as Governors at local schools. In June 2006, a team of senior officers worked with the pupils and staff at nearby Charter Primary School to build “friendship benches” as a lasting and creative legacy for the children. This was part of a wide-ranging programme to support the primary and secondary schools right on our doorstep.

8.21 In addition, students and staff raise many thousands of pounds for local charities during “RAG Week” and other events.

## 9. RATIONALE FOR GROWTH OF THE CAMPUS

9.1 The need for physical coherence was emphasised in a recent report by a HEFCE body, the UK HE Space Management Project.<sup>28</sup> The strengths of HE institutions studied in the report derived from internal trans-disciplinary contacts, from the connection of teaching with research, from the connection of the academic with the social and from the relatively non-hierarchical connection of senior academic staff with junior colleagues. According to the report:

*“HEI’s more or less coherent and continuing physical presence is, to an important extent, what allows these integrated features to operate, and so to make them dynamic and resilient organisations. (This need for physical coherence may also help to explain why the ‘branch campus’ approach- on the face of it a sensible way to spread the benefits of academic excellence more widely – is usually problematic in practice: there are no important global universities)”*

9.2 From Warwick’s perspective, the need to build on its existing campus rather than set up a satellite site elsewhere is integral to its future success. If the campus were to operate from separate sites, this would have a detrimental effect on interdisciplinary research, it would significantly increase management and administration costs, result in the duplication of key support facilities, and lead to a substantial increase in travel overall both to and between campuses.

### **What The University Needs To Build and Where**

9.3 Our vision goes well beyond the provision of more research laboratories, teaching spaces and accommodation of the traditional kind, although these will be necessary. We believe that we will need:

- purpose-built interdisciplinary research centres of the highest quality to house teams of researchers and students working at the leading edge of human knowledge
- flexible-use accommodation capable of quick reconfiguration to allow the University to respond to urgent, possibly unforeseen, developing research

---

<sup>28</sup> *Impact on space of future changes in higher education* SMG March 2006/10

needs and to meet the needs of industry and commerce in order to facilitate greater access to the Warwick knowledge base

- interdisciplinary doctoral training centres to provide the most conducive environment for training the researchers of the future
- spaces in which researchers from all disciplines can interact with the aim of encouraging the development of new ideas for interdisciplinary research
- spaces that will encourage and foster greater interaction and collaboration with innovators and high-tech businesses
- spaces in which our research can be made available to the public and which could house permanent interactive educational exhibitions
- a learning grid, modelled on those already available to students, for public use
- public-use open spaces which will be the foci for our 'knowledge community'
- space for expanded adult and continuing education facilities
- purpose-built incubator units for start-up companies
- social and leisure facilities for staff, student and public use
- high quality accommodation for staff, students and high-ranking visitors from HE institutions and research organisations from around the world.

9.4 It is a central aspiration of the University to create an environment that is lively and which encourages a sense of community for everyone using the site; the concept of providing a mix of University activities in all parts of the campus is key to creating this vibrant and sustainable community. University activities benefit from active interaction between students and staff, which allows ideas and interests to be easily exchanged. A rich social and intellectual culture is created, particularly where members of the University come from many different countries. In physical terms, this requires the various buildings and activities of the University to be located close to each other and connected by a clear network of public routes and squares, with places to relax and socialise. A sense of place is engendered through the integration of good quality architecture, landscape, ecology, art and archaeology – just as the buildings and landscape of the estate should be designed to support the University's activities, so their quality and character should reflect the University's high academic standing. The quality of the environment is important in attracting staff and students to the University.

- 9.5 The masterplan proposals are designed to respond to the rural and agricultural character of the landscape and the special features of the site. The main areas of development are located in those sites where they would have least visual impact in surrounding neighbourhoods. Any new developments would be designed and constructed according to the highest standards, and the estate will continue to be managed sensitively. Warwick's campus has become increasingly attractive, even as it has grown steadily in size and it was recently voted the best in the UK in a survey of students<sup>29</sup>.
- 9.6 Warwick has benefited from the significant growth in overseas students over recent years and our overseas student population rose to over 4,000, the biggest in the country. This has brought the challenge that, in order to remain attractive, we need to make sure there is a more balanced experience in university residences. For example, the consequence of the University's current guarantee to provide all overseas students with accommodation on campus is that some postgraduate residences have high proportions of overseas students living together. This in turn means they do not get the experience they hoped for when they came to live in the UK. Through the proposed expansion, it would be possible to provide more accommodation for Home and EU students, thus providing more balanced student communities.
- 9.7 It is important that there is further growth in residential buildings on campus for reasons of environmental sustainability: an increase in the number of students and staff who live on campus will reduce the amount of traffic. The University has been particularly successful in reducing its dependence on Government income through its commercial activities and an increase in residential buildings would also benefit Warwick Conferences, one of the largest commercial activities of the University of Warwick with an annual turnover of £21 million.
- 9.8 The need for flexibility in responding to the competing demands and needs across the full range of University activities – research, teaching and commercial, as well as the appropriate levels of residential accommodation and support facilities – means that Warwick must anticipate making full use of its historic 1965 campus over the next 10 years. To load principal activities onto the Coventry side and limit the Warwickshire land to residential use only is no

---

<sup>29</sup> In a national poll of over 10,500 University students published 16 June 2005 and conducted by the polling company Opinionpanel for the Times Higher Educational Supplement.

longer sustainable. Academic and research activities need to be located where they can maximise adjacencies with other disciplines and the masterplan must therefore provide room for expansion of key faculties and departments. More hubs of activity also need to be created across campus to make it more lively and amenable to staff and students, both in support of their work and study, but also their leisure time, particularly those who live on campus.

### Estimating the Likely Scale of Growth

9.9 Based on its vision and overall project objectives, the University clearly wishes to expand at its existing main campus. A series of ‘targets’ were determined by the University Buildings Committee and in turn endorsed by Council. Essentially over the period of the masterplan, these can be summarised as:

- a doubling of research activity
- a modest increase in student numbers
- expansion of third leg and commercial activities
- proportional growth in support facilities

9.10 At the census date in December 2005, the University Estate comprised 281,775m<sup>2</sup> NIA (Net Internal Area), comprising:

	Sq m (NIA)
Academic <sup>30</sup>	106,401
Support <sup>31</sup>	40,887.
Other <sup>32</sup>	43,638
Non-residential (total)	<b>190,926</b>
Residential	90,849
<b>Total Net Internal Area</b>	<b>281,775</b>

9.11 The plan is that this area should increase by 114,000m<sup>2</sup> NIA (or 171,000m<sup>2</sup> GEA – Gross External Area) over the next 10 years in approximately the following proportions:

<sup>30</sup> Academic refers to Teaching and Research space.

<sup>31</sup> Support includes Social catering, Central Admin., Library and Sports Facilities

<sup>32</sup> Other generally comprises Arts Centre, Conferences, Retail and Students Union.

	Current	Increase over 10 yrs	Total by 2018
Academic	106,421	44,000	150,421
Support	40,887	17,000	57,887
Other	43,638	15,000	58,638
Non-residential (total)	<b>190,946</b>	<b>76,000</b>	<b>266,946</b>
Residential (notional footprint)	90,829	38,000	128,829
<b>Total NIA</b>	<b>281,775</b>	<b>114,000</b>	<b>395,775</b>

9.12 This is a 40% increase in the overall campus footprint, and over the planning period mirrors the historic growth rate.

9.13 This scale of growth has also been tested against established models such as that developed by the Space Management Project (the HEFCE<sup>33</sup> coordinated UK Space Management Group<sup>34</sup>). Their report: (2005/27) 'Drivers of the Size of the HE Estate'<sup>35</sup> provides tools to help Higher Education Institutions (HEI's) manage their space in an efficient and sustainable way while meeting the pedagogic, research and support needs.

9.14 Their benchmarking tool estimates that each additional £1m of teaching income is associated with having an estate 1,049m<sup>2</sup> larger, while for research income it is 573m<sup>2</sup> larger. Each additional £1m of income from 'other' sources is predicted to increase the non-residential area of the estate by 358m<sup>2</sup>. Residential NIA would increase in proportion to the number of bed spaces.

9.15 Applied to Warwick, the model predicts a non-residential NIA of 187,896m<sup>2</sup> compared to an actual figure of 190,946m<sup>2</sup> (i.e. the campus is slightly undersized but within 2% of predicted size). Given the anticipated doubling of research income and extrapolation of staff/student numbers over a 10 year period (of about 40%), there appears to be a close correlation with the predicted floorspace growth.

<sup>33</sup> Higher Education Funding Council England

<sup>34</sup> SMG.....

<sup>35</sup> Report ref

- 9.16 Equally, by looking at phasing and taking the existing Five Year Capital Plan and associated space needs and extrapolating that forward a further five years, there is also a good fit with the assumed levels of growth.
- 9.17 Finally, a further test is that of affordability, and the masterplanned growth of the University is considered to be within the capabilities of the University's budget to achieve based on past experience, current funding and anticipated future income growth.