A Three Stage Urban Design Charrette for North West Cambridge: Summary of Findings

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10 May 2012 (with commentaries from Charrette reviewers and teaching staff)

This document is available on the following website:
http://www.arct.cam.ac.uk/news/nw-cambridge-urban-design-charrette-reports-its-findings
Foreword
The development of North West Cambridge provides a significant, vital and unique opportunity for the University to enhance its facilities and reputation. In the words of the Vice Chancellor: “At North West Cambridge we are determined to create a successful, sustainable, mixed-use community as an extension of the City, with buildings and public space of high quality design.” The Department of Architecture took on the challenge of providing a forum for intellectual and creative reflection of the North West Cambridge development. Through design-based explorations with graduate students, colleagues and visitors, Professor John Ellis led this activity that has enabled a productive dialogue to be stimulated between the Department, the University and other key stakeholders.

John Ellis is our inaugural Sir Arthur Marshall Visiting Professor of Sustainable Urban Design and an eminent and experienced urbanist from the US. He arrives in the Department as it enters its Centenary year and just when the design for North West Cambridge is emerging.

A six-week urban design charrette held over February and March 2012 was an opportunity for the Department of Architecture to play a significant role in the discussions concerning the future plans for North West Cambridge. John Ellis together with Dr Ying Jin from the Department of Architecture arranged a three-stage design studio with the graduate students to examine the urban design for the University’s ambitious plans for the site. A dozen graduate MPhil, PhD and IDBE students participated as a voluntary exercise over several weekends during the Lent Term. The charrette was an opportunity for the students to bring their individual expertise to bear, to learn to work in teams, respond to a set of urban design guidelines and face the many challenges of creating a coherent place that is both part of the University and a new community on the outskirts of the town.

The student design teams took the real programme and guiding principles for the first seven blocks planned for the first phase that have been prepared by AECOM. Each team was given a couple of blocks to design and were required to prepare models to fit into an overall base to demonstrate how their proposals would fit together. The three-stage charrette format has enabled the students, teachers, and reviewers to engage in a productive manner.

Meanwhile progress on the real project has advanced: the University is in the process of selecting different architects for the various sites and has recently announced the shortlisted design teams (http://www.nwcambridge.co.uk/). The results of the charrette have been instructive for both the students as well as the University in confirming the need for strong urban design guidelines and the need for interim review procedures before the various teams get too set in their designs.

This project exemplifies a way that the University can benefit from involving the expertise of its own Department of Architecture, whilst also providing an opportunity for academics and students to engage with real and exciting developments in the University. We hope the recommendations in this report will be of value to the University and to the consultant team.

Professor Koen Steemers, Head of Department
List of Participants

Graduate students and researchers
Peter Armitage, Juls Chen, Steve Denman, Hsintzu Ho, Linda Nkatha Gichuyia, Aaron Gillich, James Kimanzi, Pavni Sahni Kohli, Ranald Lawrence, Victoria Lee, Joshua Mardell, Nicola Mingoti, Xiao Rong, Li Wan, Ye Zhang.

Teaching Staff
John Ellis, Diane Haigh, Ying Jin, Michael Jones, Kiril Stanilov, Liang Zhao.

Reviewers
Nick Bullock, Peter Carolin, Rosanna Law, David Owers, Jonathan Rose, Jeremy Sanders, John Sergeant, Alan Short, Koen Steemers, Roger Taylor, Joanna van Heyningen.

The urban design charrette was directed by John Ellis and Ying Jin.

Cover image\(^1\): Artist’s aerial view of the Stage 3 Urban Design Proposal by Tristan Rees-Roberts.

\(^1\) Note the artist’s images (on the cover and Figure 9) were produced for Charrette Stage 3 design review and they do not include all the design features in the post-review final model (Figure 5).
1. Learning from a Three Staged Charrette Process

Over a six week period during February-March 2012 we worked with a group of graduate students at the Department of Architecture, Cambridge University in an urban design charrette. It took as its starting point the University’s Masterplan for the North West Cambridge development, which proposes to build a mixed-use community as part of a long term, planned expansion of the University and town. The development is located on a 140 hectare University owned site bounded by the M11 Motorway, Madingley Road and Huntingdon Road (Figures 1 and 2). The masterplan aims to create a sustainable community that is both distinct and yet an integral part of the City of Cambridge.²

![Figure 1 Location of the North West Cambridge Development in the context of Cambridge’s growth since 1880](image)

The purpose of the urban design charrette was to test alternative approaches to urban design and glean from the process insights into key components of specific urban design guidelines. The overall parameters of the Phase 1 development were taken as given. The programme included 1500 dwellings for graduate students, faculty and staff, a 2000 square metre supermarket and other retail spaces, an energy centre, a hotel, a health and community facility and a local primary school. The charrette team benefited from an initial briefing by AECOM, the masterplanning consultant to the University.

² For more information on the North West Cambridge development, including on-going development of the Masterplan and architectural competition, see [http://www.nwcambridge.co.uk/](http://www.nwcambridge.co.uk/).
Figure 2  The Phase 1 site location in the North West quarter of Cambridge

Figure 3  The Phase 1 site: Looking from the northern edge southwards with Madingley Road Park & Ride and the West Cambridge Campus in view
The charrette had a unique, iterative structure where different urban design approaches could be tested, with three successive design-feedback sessions where the teams could discuss with the teaching staff and among themselves, and test their ideas with a distinguished panel of reviewers.

The participating students worked in 3 groups, with each team designing a cluster of building complexes as envisaged by the master plan for Phase 1. The design charrette was a voluntary exercise with intensive team work over three long weekends, which were respectively followed by periods of consultation with the reviewers and specialists. It naturally attracted students who are working in the field of urban planning, urban modelling and urban design; it also attracted students from other fields of architecture and engineering. The work was shown in both drawings and physical models in order to compare initial concepts and to allow the interaction between adjoining teams. They worked at a scale of 1:500, which is large enough to show the basic building massing without being distracted by details of architectural design. Owing to the time constraints, the detailed contours of the site’s topography were not considered in model making, and the roads and buildings were laid out assuming a uniformly gentle slope towards the south.

**Stage 1: Design by land parcel without strong design guidelines.** The first stage models showed what could have been expected: talented young designers produced autonomous buildings and building complexes largely unrelated to their surroundings. The result was clearly incoherent, more of a World’s Fair than a Cambridge neighbourhood (Figure 4). A rigorous review of the work suggested it would be necessary to have clear guidelines about building types, streets, public spaces, and the use of appropriate precedents. Urban design guidelines were then produced by teaching staff and discussed at length with the student teams, focusing on the merits of their initial designs. The discussions were supplemented by visits to design precedents in Cambridge, and the Phase 1 site itself.

**Stage 2: Design with a detailed guiding plan.** The following charrette weekend saw apparent changes in the individual designs resulting from a much greater degree of coordination between teams and their adjacent sites (Figure 4).

- Graduate and postdoc housing examples such as Clare Hall were emulated as a prototype for mixing different types of residential accommodation.

- A single public square was proposed in order to create a focal point for the first phase of development.

- In place of a stand-alone University Centre building, its various activities were incorporated into the ground floor of the various buildings facing the square.

- Existing site features such as the ancient hedgerows and trees were incorporated into the site plan through minor changes to the land parcel boundaries.
Stage 3: Distillation of the findings in the wider urban context. Following the second review, a period of two weeks’ lapsed time was allowed for the students and teaching staff to discuss the issues arising from the review and obtain wider feedback. Further adjustments were made to the proposed street and open space layout as well as individual building blocks, taking into consideration the wider urban context. A new physical model was created for the whole development site using identical material and model-making method (Figure 5). The entirety of the development was studied through bird’s eye views at increasing levels of geographic coverage and detail (Figures 7-9). The outcome was then reviewed and issues arising discussed.

There are two main findings from the charrette as a process:

First, there is a need for strong urban design guidelines to define the public realm and provide a level of certainty about the form of the urban blocks. The guidelines should determine the street wall build-to-lines, building heights, preferred location of entrances, service areas, access to parking, ground floor uses etc. A common palette of materials could be established to ensure a consistent vocabulary throughout the neighbourhood.

Secondly, a review process is required to enable the various design teams to present their designs at an early enough stage to enable critical relationships across streets and the public realm to be addressed.
Figure 5  Charrette Stage 3: Final Model produced post review
Urban Design Recommendations

The charrette has also produced twelve recommendations as a way to enhance the proposed design for the Phase 1 development. They are intended as a contribution towards moving the urban design considerations to a more detailed level and achieving the overarching aims of the masterplan.

1. **Establish a focal point for welcoming new students/postdocs.** As a new urban quarter the NW Cambridge development will welcome new students, postdocs and other residents regularly and throughout the year. We propose a focal point to the east of a Market Square which will be at the centre of the development. It will combine the main bus stops with a new ‘Porter's Lodge’ for the entire development, reflecting the traditional way that the Cambridge Colleges welcome new arrivals. Combining this focal point with a Market Square will bring together the activities of the neighbourhood, not dissipate them. The Square will be surrounded by active ground floor uses, including the proposed supermarket and hotel. The square can also accommodate the main bicycle route from Girton through to Storey’s Way, with appropriate traffic design features to ensure safety.

2. **Realign the Ridgeline cycle pathway to retain the existing hedgerow.** The ancient field pattern defined by the hedgerows is an important memory of how the history of the site evolved. The Ridgeline re-alignment is fairly minor and should not materially affect the division of lots for forthcoming architectural design.

3. **Celebrate the existence of the two fine oak trees on site.** These two trees are a major feature of the site and could be at the centre of a new crescent shaped park to the north of the Phase 1 development. The crescent could be lined with a new row of well spaced oak trees to be planted at the commencement of the Phase 1, in keeping with the fine English landscape tradition. When the two existing trees eventually die they can then be replaced by new seedlings, surrounded by oak trees that will have grown up in the park.
4. **Create an urban quarter of a traditional Cambridge character.** The streets in the local centre should be of a similar scale to those in Central Cambridge in order to maintain a familiar urban character, such as exemplified by Trinity Street, Rose Crescent and the old Petty Cury in the historic core. The use of narrow lanes in the award winning Accordia development has proven to be feasible, fully meeting the needs of modern traffic and fire regulations. A mix of uses and a variety of building types will create a distinct local identity that is commensurate with the history and reputation of the University. In addition, through careful design of the streetscape it would be possible to provide an additional 50% of on-street parking compared with the current master plan, which can be used as time-restricted parking on site as well as priority parking (e.g. for the disabled, the elderly and those travelling with young children).

5. **Provide for a variety of housing types and courtyards.** The population of North West Cambridge is likely to include a range of households from individual students, researchers, faculty and staff to families of various sizes and ages. Some developments will resemble colleges, others market housing and some a hybrid of the two. There are many prototypes that can be models for North West Cambridge including graduate housing at Clare Hall, Trinity Hall’s Wychfield and recent housing developments such as Accordia. Traditional Cambridge housing as found in the historic neighbourhoods can also offer lessons on local identity. Cambridge colleges have a variety of courtyard sizes, ranging from the smallest in colleges such as Trinity Hall, Queens’ and Clare to larger courts such as those found at King’s and Trinity. Courtyard sizes should relate to the heights of the surrounding buildings in order to allow for a sense of enclosure and good sunlight access. Courtyards should allow for a variety of uses, both active and passive: for instance, Wolfson Court at Churchill College is an attractive play area for children, whereas most traditional courts have clipped lawns. The courtyard design aims to maximise south-facing spaces to live, work and play in.

6. **Maximize the number of entrances facing streets for security and an active streetscape.** The traditional college pattern has a single gated entry point and staircases facing into the courtyard. In order to create active pedestrian streets we recommended that residential units at ground level have direct entrances from the street in addition to any from the inner courtyard. The double entrance arrangement of the Wychfield buildings for Trinity Hall on Storey’s way is a good precedent for this. This enables the buildings to be part of the city fabric. Eyes and access on the streets help to create a safe and welcoming environment from the start of the development.

7. **Connect North West Cambridge with West Cambridge.** The strong landscape design in the form of double rows of chestnut trees linking Madingley Road with the main spine of West Cambridge should be extended up the main approach road from Madingley Road to North West Cambridge. This will link the two campuses through a safe and attractive route for cycles, pedestrians, joggers, and any shuttle buses between the two.

8. **Refine the layout of the local supermarket facing Market Square.** At present the masterplan proposes a single storey supermarket facing the Market Square with a basement parking garage beneath. The enclosure of the square and the mix of activities of a town centre could be
enhanced if housing or office space were built above the supermarket facing the square. This has become a new trend in planning supermarkets in prosperous urban areas and it can increase the retail footfall. The supermarket building should be designed in such a way that part of the frontage can accommodate individual shops such as a bakery, florist, news agent, which will help to enhance the attractiveness of the Market Square as the development expands. Parking for the supermarket can be accommodated in a basement beneath the store and the Market Square.

9. **Consider increasing the proposed density of the residential development within the local centre.** In order to maximise the potential of the Phase 1 development, we recommended that more floorspace be accommodated within the proposed footprint. The charrette design proposals demonstrate that a 10% increase in net density (up to 65 dwellings per hectare) is achievable. Thus an additional 150 residents could be provided for on top of the proposed 1,500 within the Phase 1 footprint. This has the advantage of locating more people within easy walking distance to the Market Square and the main bus stops. This will not affect the overall population cap for the entire project - accommodating more housing around the local centre will enable some of the outlying areas to remain as open space or to be built out at lower densities.

10. **Provide flexible-use spaces at ground level surrounding the Market Square and on main streets.** Because initially only limited retail will exist, we recommend that the ground level spaces surrounding the square be designed and built to a layout and height that are flexible enough to accommodate a variety of uses through time. These could include research and professional offices, university departments and live/work residential uses. There are successful precedents in prominent US university campuses.

11. **Make NW Cambridge a desirable destination for local activities, ‘town’ as well as ‘gown’.** Efficient and convenient transport links, services and housing are necessary rather than sufficient conditions. NW Cambridge needs a compelling positive image as a distinct and desirable place in Cambridge. This could be greatly helped by the creation of a high-quality Market Square and the Oak Crescent. This may imply that the brief for the hotel should consider accommodating a suitably wide range of service options to cater for high profile events as well as local needs. A landmark observation tower on the Market Square will help wayfinding, and more generally, ‘put NW Cambridge on the map’.

12. **Energy Strategy.** The Energy Centre located behind the supermarket can share the same service and delivery area and has the potential of acting as an important icon symbolizing North West Cambridge’s commitment to sustainability and energy efficiency. The denser core will help reduce grid losses on utility runs. Predominantly south facing orientation of the main rooms together with double aspect accommodation and perimeter type urban form maximises the area of passive energy zones in offices and workplaces as well as in housing.
1. A new 'Porter’s Lodge'

2. To retain the existing hedgerows

3. Celebrate the two fine oak trees on site

4. An urban quarter of the traditional Cambridge character

5. A variety of dwelling types and courtyards

6. Maximise the number of entrances facing streets

7. Connection with West Cambridge

8. Supermarket facing a Square of multiple activities

9. Increase density within Phase 1 development

10. Flexible-use spaces in the centre and on the main streets

11. Create a vantage point for the Cambridge skyline

12. Maximise efficiency in energy delivery and use
A more detailed report on the Urban Design Charrette is in preparation which will present the detailed urban design proposals. Meanwhile we together with the student teams would be happy to respond to queries regarding the findings and recommendations.

John G Ellis, AIA, RIBA, Sir Arthur Marshall Visiting Professor of Sustainable Urban Design
Dr Ying Jin, University Lecturer

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10 May 2012 (with commentaries appended)

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3 Note the artist’s images (on the cover and Figure 9) were produced for Charrette Stage 3 design review and they do not include all the design features in the post-review final model (Figure 5).
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Commentaries by Reviewers and Teaching Staff

Professor Jeremy Sanders, Pro-Vice Chancellor for Institutional Affairs, Cambridge University

Professor Peter Carolin
Dr Alistair Fair
Diane Haigh
Joanna van Heyningen, van Heyningen and Haward Architects
Dr Michael Jones
Jonathan Rose and Rosanna Law, AECOM
John Seargeant
Professor Alan Short
Dr Kiril Stanilov

(More reviewers and teaching staff are expected to contribute commentaries – for an up to date collection please check the website: http://www-falcon.csx.cam.ac.uk/site/ARCT2/research/north-west-cambridge-charrette/north-west-cambridge-urban-design-charrette.)
Commentary by Prof Jeremy Sanders, Pro-Vice-Chancellor for Institutional Affairs

I offer this brief commentary from the perspectives both of the University and of myself as an individual.

Some explanatory background: As Deputy Chair of the West and North West Cambridge (NWC) Estates Syndicate I am heavily involved in many aspects of this exciting development: I provide the most senior academic liaison between the project team and the University, and I am Chair of the Appointments Panel that will choose and recommend architects for Phase 1. As PVC I am responsible for overseeing all aspects of the University’s Human Resources strategy and policy, and that includes ensuring that in future we have attractive affordable accommodation for postdoctoral researchers and other new staff coming to Cambridge. I am also responsible as PVC for liaison with local partners, including the City Council, the County Council, and the Marshall Group (who have generously funded the Sir Arthur Marshall Visiting Professorship of Sustainable Urban Design).

The University is determined that we will create in North West Cambridge a successful, sustainable, mixed-use community as an extension of the City, with buildings and public space of high quality design. We aim to achieve this in part by engaging with a wide range of interested groups within the University and in the wider community in addition to our professional project teams and consultants. We were therefore very pleased that John Ellis, the inaugural Sir Arthur Marshall Visiting Professor, offered — together with Ying Jin — to lead a charrette focussing on the first phase of NWC.

It seems to me that there are at least three major positive outcomes of this charrette:

• It was clear that the students benefited hugely from this experience. They obviously greatly appreciated the opportunity to interact with John, Ying and the many senior individuals from within and without the Department of Architecture who participated, giving so generously of their time and expertise. This is a fine example of how the convening power of Cambridge can enhance the learning experience of our students.

• The final Report contains many ideas that will inform our thinking and the further development of the Master Plan.

• Finally, I personally was delighted to be able to attend all three workshops and to be able to contribute to the discussions and evolving thinking. I have learned a good deal about how architects and designers think and work together, and I now look at urban developments with a more critical and informed eye. This experience will be invaluable in the coming weeks and months as we choose architects and landscape designers. The charrette will therefore make a major contribution to the quality of our decision-making in the short term, and to the success of North West Cambridge for decades to come.

This is also an excellent example of how philanthropy, in this case thanks to the Marshall Group, can make a major contribution to the development of the University and Cambridge more generally.
Commentary by Professor Peter Carolin - Historic Context

Historically, the sites of the University and its constituent colleges are introverted. They are in the city but not open to it. Like the religious houses that preceded them, they tend to be enclosed, protected communities. New, 20th Century colleges maintained this form. So, too, did the University sites (such as those on either side of Downing Street) until the mid 20th Century when, with the development of the Sidgwick and West Cambridge sites, the University created areas which form part of the city fabric, genuinely open to others. Citizens – as well as scholars – can wander round the Sidgwick site at any time of day or year and Stagecoach runs a regular service through the slowly filling expanses of West Cambridge.

So far, the results of this incursion into city-making have been mixed. Hugh Casson’s masterplan for the Sidgwick site was never followed through – subverted by buildings (History and Law) that pay scant attention to their neighbours. Masterplans should never be cast in stone – accommodation needs and academic priorities change and so, too, do local authority planning policies – but they should not be casually changed either. But here comes the difficulty for the University – it is an academic institution, not a developer. The academics on its committees are very busy people and committee membership frequently changes. In contrast to the colleges, where the institutional memory is usually strong, it is weak when it comes to the University estate.

Recent development of the Sidgwick site has benefitted hugely from the appointment, ten years ago, of Allies and Morrison as masterplanners. They not only demonstrated that the site’s capacity could be increased but deftly re-ordered it (as far as they were allowed). Their buildings and courts for English and Criminology, set a standard for a modest, appropriate architecture that has been ably followed by Nicholas Hare Architects’ recently completed Alison Richard Building.

Shortly after its inception, the Sidgwick was praised by Nikolaus Pevsner. West Cambridge, however, has never enjoyed a good press. At the time that the City rather grudgingly consented to its development, it was on condition that it should be at a low density. This and the combination of the Veterinary School and its paddocks in the centre of the site and other existing buildings at both the east and west extremities created a huge challenge to the potential masterplanners. One suggested that each building should be set in a walled enclosure or ‘garden’ arranged on a north-south axis and two followed the rural business park formula of buildings scattered in a landscaped ‘park’.

The winning proposal, by Richard MacCormac, was inspired by The Backs – with Madingley Road playing the part of Queens’ Road and the paddocks of the Vet School acting as a giant version of the open areas between the road and the colleges. The majority of the new buildings lie along the Coton footpath, overlooking the fields, rather than, as one might expect, along Madingley Road. Everyone agrees that the low density was a mistake and it is said that the City would be willing to reconsider this. But a key factor has been the lack of a long-term ‘design champion’ in the person of a senior academic with an awareness and interest in the site as a ‘piece of city’. Such a person should have supported the masterplan’s development through a continuing dialogue with the masterplanners.
The North West Cambridge project has benefitted from the lessons of West Cambridge. There is an awareness that this latest project is part of the never-ending process of making the city and a determination to create a community that is both distinct and yet part of a wider whole. Above all, the difficulty of the task has been recognised and a new structure developed to oversee it. The very fact that the Department of Architecture’s request to be able to use the project as the basis for a design charrette was instantly welcomed and that its progress and outcome has been discussed with such openness and lack of defensiveness by all parties is an entirely new development in the creation of the University estate. So, too, is the intention to encourage a creative dialogue with and between the ‘site package’ teams.

Ultimately, it is up to the client (the University) to decide how to develop such a project – all designers (whether consultants or students) can do is to demonstrate possibilities (and, in the process, to enhance their own understanding and skills). What a pity that the Mill Lane area could not have been the object of a similar, design-led, exercise.
Commentary by Dr Alistair Fair - Creating a university townscape: the experience of the Sidgwick Site

Development on the Sidgwick Site, the home of many of the University’s Arts faculties, began in the 1950s and has continued into the twenty-first century. The original masterplan, devised by the architects Hugh Casson and Neville Conder in 1951-53, represents one of the earliest post-war attempts to plan university development comprehensively, not only in Cambridge but also nationally. Infused by the ‘townscape’ philosophy that was favoured by the Architectural Review in the late 1940s and early 1950s, the plan proposed a permeable sequence of spaces and buildings. The site was carefully considered to create interest and diversity; particular attention was paid to the choice and juxtaposition of materials, and the ways that they were detailed. As the University undertakes a major masterplanning and construction project in North-West Cambridge, it is worth revisiting the circumstances in which Casson and Conder were appointed, the key features of their proposal, and the Sidgwick Site’s subsequent history.

The idea that the Arts faculties might be concentrated in a single location first found concrete expression in the mid-1940s. The university’s central science sites were cramped; the removal of non-science departments from them would allow reconstruction on more efficient lines, a key goal given that the Barlow Report of 1946 had emphasised the need for Higher Education to produce the scientists and engineers on which Britain’s place in an increasingly technological world depended. At the same time, the centre of gravity within the University had been shifting from the colleges towards the faculties since the 1920s. Those in the Arts looked enviously towards the laboratories, libraries and offices of their colleagues in the Sciences. Many of the Arts faculties had cramped libraries, while Arts teaching staff without a college affiliation were often forced to supervise in their own homes.

The University resolved to buy the former Corpus Christi cricket ground in Sidgwick Avenue in 1948, and was also able to secure an option on the adjacent houses, then owned by Gonville and Caius College, that fronted West Road. This area, adjacent to Selwyn College, had first been considered for university development in the 1920s, when it was one of several locations examined for the University Library. Its proximity to the site on which the UL had since been constructed, on the other side of West Road, was one attraction. A second advantage was that this location would not worsen traffic movements. Arts and Science students and staff would be moving in different directions, a key consideration before the narrow Silver Street bridge was reconstructed.

Earlier in the twentieth century, the University had begun the development of the central Downing Site according to a block plan. This plan had, however, been rapidly abandoned in the face of changing needs, and there was a sense that the Sidgwick Site should avoid the ‘variegated architecture’ that had resulted. The committee was ‘anxious not to prejudge questions of architectural treatment, nor rigidly to bind the architects of thirty or forty years hence to a strongly marked style’. What was required was not a definitive plan, but rather a framework that could be adapted in the future as required. That this was the brief is significant, reminding us that masterplanning as a discrete activity, carried out without any expectation that the planner might go on to produce detailed designs for actual buildings, was a relatively new activity in post-war Britain. Expectations in Cambridge were high. Nikolaus Pevsner, then Slade Professor, hoped that an ‘ideal campus’ might result. He had earlier expressed his frustration with
recent Cambridge architecture, which in his view was often characterised by excessive stylistic conservatism.

Two architectural practices were commissioned in 1950 to prepare proposals. The first, Robert Atkinson, produced a Beaux-Arts scheme, with formal quadrangles laid out to either side of a dual carriageway leading from Sidgwick Avenue to West Road. The elevations of Atkinson’s buildings were variations on a ‘stripped classical’ theme, not unlike the architect’s earlier Barber Institute at Birmingham University; several featured grand colonnaded porticoes. In contrast to Atkinson’s rather prescriptive proposal, Casson and Conder’s submission was far less rigidly defined. It drew on ‘the carefully balanced combination in the layout of the formal and the picturesque, of the spacious and of the intimate […] emphasised and enriched by the architectural character of the buildings and in particular by the materials to be used.’ A loose series of quadrangles recalled collegiate precedent as well as contemporaneous housing projects such as the work of Tecton, Drake and Lasdun at Paddington. The report offered not detailed designs but rather a series of basic blocks, the area and height of which was based on faculties’ estimated spatial requirements. For each, massing, materials and texture were suggested – a dark and rough building here, a light and smooth structure there. The centrepiece was to be the ‘Raised Faculty Building’, intended as an almost monumental anchor for the new part of Cambridge that was emerging. It would be a foil for other buildings that could be more economically designed and less formal in character. Faced in stone, its ground floor was to be left open, evoking the Corbusian idea of pilotis in its massive dark concrete columns but presented by Casson in terms of allowing vistas across the whole site. Such vistas would be more informal than the grand axial prospects of Atkinson’s scheme.

No record appears to survive of the decision-making process by means of which Casson and Conder’s scheme was selected. However, from subsequent correspondence and minutes, it seems that their success stemmed from the informal and adaptable nature of their proposals. Also important was the way in which they related the site to its surroundings. Although both the Casson/Conder and Atkinson proposals treated the site as a permeable piece of city in a way that contrasted with the introverted nature of previous developments in Cambridge, Casson and Conder paid particular attention to the Sidgwick Site’s relationship with its surroundings. For example, the Economics building was conceived in terms of its relationship with Selwyn College’s gardens, with the result being likened to the way in which Clare College directly overlooks King’s College on the Backs. No doubt also significant in ensuring Casson and Conder’s victory was the fact that Casson was in the early 1950s the most famous site planner in the country, having overseen the Festival of Britain site on London’s South Bank in 1951. His work there was a particularly apt preparation for the Sidgwick Site, as it had required him to co-ordinate the efforts of a galaxy of designers, creating a coherent experience from their individual contributions.

There was no commitment subsequently to appoint Casson and Conder to design any of the buildings indicated on their plan. However, in the event, the initial structures on the Sidgwick Site were all executed to their designs. The Raised Faculty Building, the Faculty of Economics and Politics, and Lecture Block A, constructed between 1957 and 1961, form a coherent ensemble that demonstrates especially well the Masterplan philosophy of incident and variety. The buildings are raised on a paved podium above their surroundings, partly because it was felt that the slight level change would dignify them,
partly because it was thought that the three-dimensional experience of moving up and down would add interest, and partly to stop cars and bicycles penetrating the area. Cobbles are juxtaposed with paving slabs; nearby they are arranged in swirling patterns around trees. Concrete bollards with integrated lighting provide useful visual incidents, as do benches, while the planting of the quadrangle softens the texture of the whole. Adding to the idea of the site as a piece of city, certain iterations of the scheme included a number of small shops as well as a refectory.

Casson and Conder continued to work into the 1980s on the southern part of the Sidgwick Site, which retains a particular consistency as a result. However, disquiet with their approach in certain traditionalist quarters of the University came to a head in 1960 when the initial design for the Lady Mitchell Hall was rejected in the Senate. Meanwhile, for the new avant-garde of the 1960s, Casson and Conder’s designs increasingly seemed rather pedestrian. At the same time, the original development plan was undermined by Caius’ decision to retain one of the West Road houses which the University had believed would be available for development, and by the college’s insistence on acquiring another part of the site as a condition for the sale of the remaining West Road houses. In these circumstances, it was decided to revisit the development plan, and to change designer for the History Faculty, the commission for which was given in 1962 to the practice of James Stirling and James Gowan. Their proposal, which uniquely combined the teaching and administrative rooms with the Faculty library, was welcomed by the academic staff. Stirling and Gowan soon split, with the development and execution of the design falling to Stirling, its principal author. Whilst the design accorded with a revised Casson/Conder masterplan, the History Faculty set a trend for a more individualistic approach.

In concluding, how should we assess the Sidgwick Site, and what can we learn from it? In judging the scheme, we might note that the area that best exemplifies the principles of the masterplan was developed by the planners themselves. The area fronting Sidgwick Avenue remains a particularly cohesive experience, a real fusion of buildings and setting that is characterised by careful juxtapositions and felicitous detailing. The northern part of the site is more varied. Is this the inevitable product of many hands working over several decades? Should we criticise the original masterplan for failing to accommodate changing needs and architectural fashions? Is the problem that revisions to the masterplan were never fully followed through? Or should decision-makers have followed the original framework to the letter? It is, however, perhaps churlish to ask these questions. The buildings may deviate from the principles laid down by Casson and Conder, but the results – largely by leading practices, and of considerable merit in some cases – remain compelling in their contrasts, and their compact inter-relationships. Furthermore, though it was not wholly executed, the act of commissioning a Development Plan in itself was a novel move, and particularly the wish that it function as a loose, permeable framework rather than the kind of rigid, introverted layout that had been tried (and had failed) on the Downing Site. As a framework that simultaneously attempted to engage with the broad context of site planning and the detail of materials, it not only resulted in an immersive panorama of key ideas and moments in post-war British architectural history, but also offers a compelling philosophy on which to plan in North-West Cambridge.
Commentary by Diane Haigh: Innovative thinking about the brief

The design charrettes in the Dept of Architecture touched on key areas of briefing that it might be useful to record – not least as the people involved were representative of the target population, being themselves an international set of postgraduate students and postdoctoral staff, some with partners and children. Their feedback, even in the limited time available, raised interesting questions about perceptions and priorities.

Creating a Community

It is enormously important for the University that NW Cambridge quickly coheres into a successful community where their international postgraduates and postdocs will enjoy living. Cambridge needs to continue to attract top talent to keep delivering academic excellence in an internationally competitive market. Rival job offers accompanied by a tempting accommodation package could woo people away from Cambridge. The new housing in NW Cambridge is the University’s secret weapon.

We had a lot of discussion about what would enable a successful community to grow here, in contrast to the new housing on the West Cambridge site, where there is no sense of shared facilities. Partners in particular often find life out there very lonely and unconnected to the outside world.

The Colleges are widely seen as a very attractive aspect of academic life in Cambridge. They are a very strong factor in integrating newly arrived staff and students. Establishing a new postgraduate College here might bring the opportunity to rethink the nature and capitalize on the strengths of the institution, to be more unpretentious and outward looking, to allow more informal interchange, attract senior academic members and accommodate families.

The group visited colleagues in graduate accommodation such as the graduate flats in Churchill, Wychfield graduate accommodation for Trinity Hall and existing graduate Colleges such as Wolfson, Darwin and Clare Hall. It was felt that not since Ralph Erskine designed Clare Hall in the 1960’s had there been such innovative thinking in how to integrate families, couples and single people. There, the varied grouping of the housing creates outside spaces where people meet one another casually in passing. The informality of the hall and common room spaces still encourages easy mixing. This unpretentious informal atmosphere seemed to offer a strong departure point for thinking about new colleges, whereas the grand traditional courtyard patterns are far less family friendly.

As there will be no existing community to start with, we need to understand how to provide opportunity spaces that are adaptable to different uses over time. It may be that a playgroup is needed to start with, whereas this space could become a drop-in centre or take small businesses providing local employment over time. Adaptable shell spaces facing on to the streets were suggested in several of the housing schemes.

The commitment to make NW Cambridge a low carbon community was seen as a big plus point. The charrette scheme suggested moving the energy centre into a prominent central location so that this is signaled and celebrated.

Managing traffic along the cycle routes that pass through the heart of the scheme was a clear priority for pedestrian safety. The discrepancy in expectations between the experienced commuter traveling at speed and young children en route to school needs to be recognized in the design of these routes. Interesting cultural differences emerged about expectations that most people would cycle. It was felt
that for some women this would not be an acceptable assumption. Particularly after dark, many would not want to cross the poorly-lit green space from Storey’s Way. With careful detailing of routes and bike parking, NW Cambridge can become a model of urban transport based on cycling.

Exploiting partnerships

The planned town centre will include facilities to be run by commercial partners. How can the University engage with them to get the most out of these new uses? The proposed supermarket, hotel and conference centre, community café etc will all be crucial generators of activity around the new central square. What will draw both locals and visitors and enable the place to thrive commercially? How can this local centre play a distinctive part in the city?

Discussions with the supermarket operator might encourage them to envisage one of their more innovative stores in this location. Increasingly they are willing contemplate bringing their specialist retail elements out of the box to the edges where the dispensary, the bakery, the mobile phone outlet can be accessed as separate elements. The supermarket might front on to a covered market to create further options for cafes and small retail units around the square adjacent to the anchor of the supermarket, whilst also providing a covered space for occasional events, such as farmers’ markets, cycling trail meets, art fairs, childrens’ activities, outdoor cinema band concerts etc.

Choreographing activities for the central square would be necessary to keep it busy. A positive programme of events and temporary pop-up installations will be needed to attract entrepreneurs who can exploit the space. This was seen as adding to the range of possibilities for Cambridge itself, where most of the public spaces such as the market square are constrained by existing uses.

Process not a product

Masterplanning is not just about defining an end state, a well coordinated physical environment which ticks all the boxes and looks good. It also needs to be able to track a process of growth that will provide a positive place for family life from the first. NW Cambridge cannot afford to spend years as a bleak building site - it will lose its key audience. Community building is a process of evolution, not a product. The University may need to factor in a positive process of consultation with its existing post-graduate population to really understand their needs and priorities, before it can spell out the new possibilities imaginative provision that will truly bring this place to life.
Commentary by Joanna van Heyningen, of van Heyningen and Haward Architects

I felt that the timing this exercise, initiated by the Arthur Marshall Visiting Professor of Sustainable Urban Design at Cambridge School of Architecture, was apt – it could result in being very useful to the University. Its purpose was to test the viability of the Masterplan for the University’s phased development of North West Cambridge, by asking graduate students in the Department of Architecture to design parcels defined by the Master plan. So the exercise was certainly a teaching tool, but it was much more than that: it was a demonstration, in advance of the real thing, of what is thrown up when a group of different architects and designers set to work on developing the Master plan in detail.

It could be the first of several of such informed debates at the Cambridge School of Architecture, undertaken by mature students from different backgrounds (who themselves could be the users of such a development) and it could be an exemplar of how development work should be openly tested now and in the future. It should be of great value to the University and its consultants working on North West Cambridge, the University’s own Department of Architecture is an excellent vehicle for it.

For me, the main lessons of this exercise were:

1. The proposed development at North West Cambridge differs from a normal commercial development. Of course value for money must be achieved, but the University is in a position to prioritise those things which it values highly, such as the quality of the architecture and the building, its longevity, and its flexibility to allow for future change of use. Examples of adaptability that we discussed were:
   - the capability of ground floor accommodation to convert eventually to retail or to offices as the development matures
   - parcels of student accommodation to convert eventually into a new College, needing its own porter’s lodge, common rooms, perhaps dining hall.

2. The importance of making a Place. North West Cambridge has the mono-culture’s inherent danger of not being as vibrant and interesting (and as good to live in) as a place that has grown up over time and houses a multitude of uses and users. The very recent example of West Cambridge suffers from this problem, among others.

3. However, the supermarket envisaged for the first phase at North West Cambridge represents a terrific opportunity to make a Place right from the start, bringing people from elsewhere in the region into its heart. Attention needs to be paid to how vehicles arrive, and how people get from their cars into the supermarket. The students suggested ways of capitalising on the presence of visitors to the advantage of the life of North West Cambridge and its residents. The University has power here. We know that high-end supermarkets are keen to take this Anchor Store, and we think that they will work with the University to cater for its wider needs, if the University is proactive about demanding this.

4. It is vital that the first phase of the development includes the whole of the new Public Square, with all its sides completed. Again, this might not be what a commercial developer would do, but the University must put its resources into making a true Centre for North West Cambridge from the outset.
5. The Public Realm at North West Cambridge is arguably the most important thing about it. It should be designed as the context in which the architectural parcels are developed. Again, an opportunity for the University to act as a culturally and environmentally conscious client. The integration of car, public transport, bicycle and pedestrian routes and spaces combined with a thoughtful exploration to fronts, backs and servicing, and commitment to quality in materials and landscaping – these are all at the heart of a successful phased development at North West Cambridge. This exercise at Cambridge’s Department of Architecture has demonstrated exactly how difficult the design of Public Realm is, and how it does not come about by accident. It needs to be adaptable and thoughtful, and it needs to be in place before the architectural lots are set.
Commentary from Dr Michael Jones - Housing and living at NW Cambridge

The site at NW Cambridge offers an exciting opportunity for the University to develop not only a new community, but one which is integrated into the broader life of the City and the University.

The University is not only a large employer, but has a high turnover of staff, primarily the result of the short term, two to three year, funding for research staff. As a result, the University recruits around 2,000 people every year, less than 150 of whom are Lecturers or Professors. Over half of the staff recruited, including over 80% of academic and 70% of research staff, move to Cambridge on appointment, from elsewhere in the UK or from abroad.

At present, these staff must find somewhere to live in the private rented sector, before either buying a home or leaving Cambridge at the end of their funding. This adds to the pressures in the overheated Cambridge housing market, and NW Cambridge offers a unique opportunity for the University to relieve some of this pressure by building homes to rent to its own staff.

The resulting community at NW Cambridge will have a high proportion of staff at the beginning of their careers, and on modest incomes: just under a third will still be single, rather over a third will already have a partner, and just under a third will be starting a family. The majority will have moved to Cambridge to take up perhaps their first job after postgraduate study, and most will only stay in Cambridge for perhaps two or three years. Few will be affiliated to a College.

NW Cambridge offers the opportunity to create a new community which may be able to offer not only shared services but also a shared intellectual life to the staff who will live there. The masterplan envisages that the first phase of development will contain mainly housing for staff and graduate students, together with some private housing.

A critical factor in developing this large 140 hectare site will be to ensure the rapid creation of the critical mass of inhabitants that is needed to support local services and to establish the early seeds of community. The charrette has helpfully shown that higher densities can be achieved in the first phase than envisaged in the masterplan, allowing lower densities to be developed in later phases.

There are obvious tensions between the idea of an identity for the University staff and graduate housing, and the desire for an integrated community; between the desire for a sense of place and the dislike of the separate ‘gated community’; between the need to provide for community facilities and the need for the community to develop spontaneously and organically.

The charrette has explored some of these tensions, and has suggested a number of possible approaches, including the development of the square, the marking of the centre of the new community, and the provision of the “Porters’ Lodge” to mark the entrance. It is to be hoped that these suggestions will prompt new ideas and responses from the architects appointed to design the first phases of this new community.
As Masterplanners for the North West Cambridge project, we were delighted to participate in the three stage urban design charrette and to be able to contribute both to the briefing and to the review process. At the outset, we were able to provide the charrette with the illustrative masterplan developed for the purposes of the Outline Planning Application and a preliminary draft of the Detail Masterplan for Phase 1.

Importantly, these documents set out the broad principles of the University’s development proposals but are not a finite, closed set of design solutions. Rather, the aim has been to secure as much flexibility as possible for the University through the planning process, by establishing outline parameters for development only at this stage. In due course, architects will be appointed to develop site specific solutions in response to the University’s brief and detailed design guidance, prepared by the masterplan team. Neither the briefs nor any design guidance for Phase 1 was available at the time of the charrette.

It was exciting to witness the charrette moving from first principles through an iterative three stage design process. At first, teams grappled in isolation with the functionality of plot specific requirements and as initial solutions were brought together, they were confronted with a totality that appeared disjointed and unresolved in many areas. The need to work together closely in relation to each other’s developing proposals was absorbed and a guiding plan was advanced towards an alternative synthesis. By the third iteration, a clearer urban structure was established to coordinate all proposals, including stronger hierarchy to the open space and movement network, distribution of uses, massing and an ambition to provide visual coherence through unity of materials.

In a condensed way, the charrette has followed a path anticipated when architects are appointed by the University and as such, many of the findings and recommendations are consistent with the design guidance and the reference plan to be provided to architects in due course. However, a number of interesting ideas and critical reflections were raised through the charrette process, which will add value to the evolving masterplan and the University, beyond the learning experience for the teams involved.

While there are several suggestions which may or may not be valid when tested in detail, the goal to establish a singular focal point for welcoming new students and postdocs is particularly important. In the third iteration, this is manifest in both the ‘single square concept’ and the idea of a campanile to mark the entrance to a new collegiate cluster. Throughout the masterplan process, the single square concept has been studied, debated and eliminated on the basis that a single space would be too large and weakly defined to hold the proposed density of uses with any intensity of urban experience. The direction promoted by the masterplan is by contrast, to create two distinct but connected spaces within a network of streets and squares defining the local centre, either with a commercial or a community or a collegiate focus.

The charrette team’s proposal to create a strong arrival signifier, integrating porters lodge, bus stops and cycle parking is welcomed and should be taken forward in the context of placing greater emphasis on the importance of Ridgeway Place to the arrival experience and the identity of North West Cambridge to the University overall. This should include creating a strong setting for the new collegiate
cluster to the west of the Local Centre, where Ridgeway Place itself may provide the threshold and address for a new collegiate development. Also, the image of a campanile marking North West Cambridge is beguiling, the efficacy of which will be discussed with the appointed architects and the University’s development team amongst other suggestions, in due course.

Otherwise, it is very encouraging that many of the high level findings of the charrette team include aspirations and ambitions embodied within the Masterplan and held by the University’s project team. The charrette has been an exciting foretaste of the design development process ahead and points to the many ongoing learning and research opportunities for the University provided by this ambitious and influential long term project.
Commentary by John Sergeant

It was a pleasure to attend the final Charette presentation, and return to the fray of project work after many years of teaching design.

The occasion was clearly a rich learning experience for all concerned. Such projects are an integral part of teaching architects and are little understood in the University at large, so the work and discussion had its own intrinsic value.

Recognition by all of the importance of a social and visual core to the project from day one was heartening. Lessons have been learned. Students had tussled with giving identity to each element of housing and had tackled the frequent conflict between aspect and prospect (orientation and view). I felt that some students had succumbed to formula, e.g. a courtyard layout, without recognising its magical quality; all design must be mentally inhabited. 'How do I arrive home?' There was sensitivity to the overall form of the development, however the potential of exploiting car parking, excavation and contour to combat noise and define the western edge (an acropolis-form) in relationship to the large-scale elements of motorway and the American Cemetery at Madingley was under-explored. Given its short duration however, the work was highly creditable to all.

I do hope that future projects in the City can be subjects for similar scrutiny and debate, and that the initiative can spread from this necessarily University focussed start.
Commentary by Professor Alan Short

Professor John Ellis, as a prominent 'New Urbanist' has given us a tremendous hands-on lesson in practical urban design in considering NW Cambridge. We inspected the first iteration of the alternative masterplan with interest, an heroic effort by our talented and enthusiastic graduates which seemed simply to confirm just how difficult meaningful design at this scale is. However this was not to be John's sole revelation by any means but the start of a truly fascinating process in which on a fortnightly basis the plan became liquid again and its many authors learnt how to broker their various aspirations and architectural preferences within the group.

The lesson for us was the process. The response to the notice inviting interest in the live project was overwhelming. A significant proportion of the world's leading designers, not least landscape designers, responded and it has been a very difficult, painstaking ad scrupulously fair exercise to assemble shortlists out of this response. Will the successful teams be able to achieve the humility, the 'state of grace' our much less experienced graduates started to achieve, to allow their emerging ideas to liquify and condense through a similar iterative process. John has shown us how powerful such a process can be and that the hitherto exemplary management of the selection process should redouble all efforts to achieve this level of transformation in which disparate designs undergo a similar level of transformation. The stakes are of course very high.

Within the University community one detects a certain scepticism that a wonderful new place, a real alternative destination, might emerge out of this huge exercise rather than an empty shell reminiscent of the new coagulations of housing one sees en route to London. The ancient centre of Cambridge sets an appalling challenge, the physical consequence of an almost infinite number of heartfelt decisions, disagreements, even calculated insults toward neighbouring institutions in the distant past, every square metre precious and loaded with associations, personal and public. What new architectural arrangements are going to provide the infrastructure for a myriad new associations and memories in NW Cambridge? That is the not inconsiderable challenge to the small army of international class designers to be selected.

It is not unsurprising that Ralph Erskine's Clare Hall captured the attention of our graduates. Here Erskine stepped around the natural tendency to revive the college quad form, as many other did in post war Cambridge, to invent a wholly new and persuasive close configuration of type buildings for their new purposes, courtyard houses for visiting academics with young families, heaven forbid, apartments for graduate students on their way to post doctoral posts, an extraordinary unified common room opening onto a non hierarchical dining hall and a courtyard for scholarly work, it is still slightly shocking but now filled with associations and the memories of a large and loyal alumni. So a contemporary authenticity is achievable. Very happily the University has set up the NW Cambridge project imaginatively enough to have a real chance of delivering against this challenge.
Commentary by Dr Kiril Stanilov

The North West Cambridge project sets a historical precedent in the growth of Cambridge by creating a new urban node in the periphery of the city, which will operate with a degree of self-sufficiency in terms of its mix of essential activities (dwelling, studying, work, shopping, recreation). In this, NW Cambridge is unique and quite different from preceding urban expansions to the fabric of the city, which have emphasised a single use, be that residential, institutional, or some limited combination of the two.

The charrette offered a valuable opportunity to assess, test and develop further some of the key ideas embedded in the existing masterplan. Within a very short time, the students participating in this event had to familiarise themselves with a wide range of problems that the existing plan had to address, and to offer new possibilities for the development of the area within the plan’s framework. In my view, the students offered several important contributions that promise to increase the chances of creating a successful new urban place with its own distinct character.

The two most potent ideas that came out of this intense design process and that challenge some of the assumptions of the masterplan are:

- **The proposal to condense public spaces.** The intention of the masterplan is to create a series of small squares anchoring different types of functions (places for public gathering, bicycle thoroughfares, parking courts, recreation, etc). However, the students felt that there is a danger in this approach of diluting the energy of public activities across the project area. In contrast, the students proposed to focus this energy in a single main square. In view of the relatively small size of the proposed development (and particularly of its first phase), it will be of critical importance to create a focal point that will operate as a heart of the new community. In that sense, my instinct is that there is a lot of merit in such a move. In addition, the students’ attempt to slightly realign the series of public spaces in order to preserve and accentuate some of the existing natural features of the site (the row of hedges, the magnificent mature trees, etc.) should be encouraged as a further line of enquiry.

- **The push to increase the overall density.** The students felt that in order to guarantee the project’s future success as a vital urban place, a critical mass of activities needs to be achieved by infusing more dwelling units and non-residential uses in the area. The charrette demonstrated that this could be accomplished in subtle ways, without significant alterations in the spatial framework of the masterplan. Proposed solutions included the infusion of residential or office uses above the supermarket, experimentations with a wider range of residential building types, and the clustering of higher densities around the main square. All of these proposals are very reasonable propositions which deserve to be explored further.

In the course of the charrette, there were a few other interesting suggestions (the adoption of existing building typologies for the design of individual urban blocks, the creation of flexible and adaptive architecture, the adoption of a proactive environmentally sensitive theme guiding the building design), but the main urban design ideas that came through in the course of this experience are worthy of further exploration in terms of the feasibility of the proposed ideas. In this sense, the charrette offered fresh new insights into a range of design possibilities at this stage of the challenging NW Cambridge project.