

## AutoCAD® Architecture for Urban Regeneration

**Wain Morehead Architects (WMA) is a multidisciplinary architectural practice set up in 1995 and based at the National Software Centre campus in Mahon, Cork. It combines architectural design with urban planning and consultancy and project management and has embraced sustainable design and environmental best practice as well as alternative forms of construction.**

WMA is a practice that has been particularly IT-focussed from its inception, largely because of the enthusiasm and personal expertise of principal John Morehead:

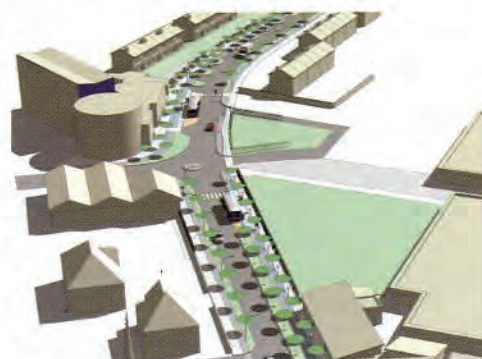
"I can remember using AutoCAD® before Windows arrived on the scene and working with 3D modelling before it was widely used. When we started the practice in 1995, we began with AutoCAD Release 13. The 3D simulation at that stage was quite complex and took time but we had clients in the commercial sector and it was a very valuable investment in terms of presenting designs to the decision makers."

An indication of the firm's commitment to IT is that it has developed its own Web-based collaboration software to enable the professionals and clients working on a project to exchange drawings, site photos, reports and minutes and to take part in online discussion forums.

"We have been hosting a Web portal and using our own software to manage it since 1998," John Morehead says. "There are currently nine projects live on the Web, each offering individual secure access to the members of the project team, the client and other stakeholders or strategic business partners. Participants can use Autodesk® Design Review or Volo View while the professionals can, of course, exchange DWF™ and the new 3D DWF files."

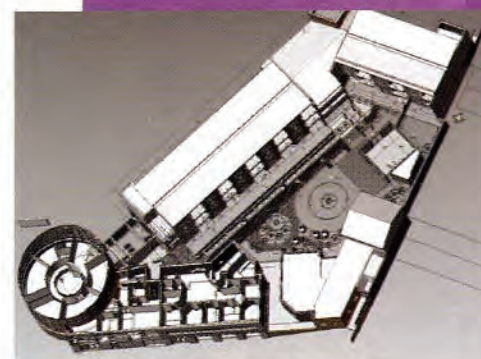
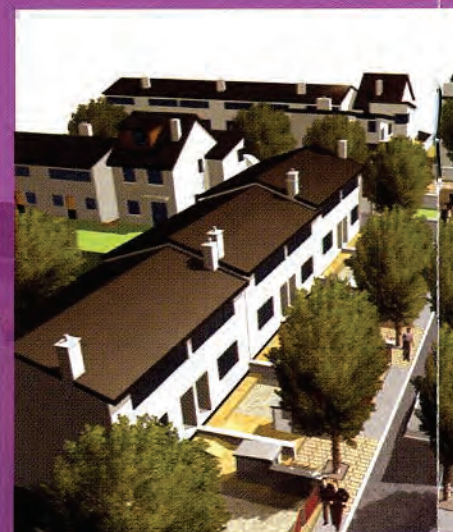
*"The whole concept endeavours to create a sustainable community model that also addresses the demographic trends in the area"*

Such e-collaboration is a necessity for Wain Morehead Architects particularly as the practice has a strategic working partnership with the firm of Frapoli Green Chatin (FGC) in Aix en Provence in the south of France. Their speciality is urban planning, in which they have an enviable reputation. In fact WMA and FGC set up Stratagem Planning & Design as a Cork-based joint venture through which they have worked together on projects both in Ireland and France and are now being considered for projects as far afield as Moscow.



Cork-based projects in urban renewal have included Keyzers Hill, Mahon, Stag Park Mitchelstown (a mixed 30 acre development) and the current €30 million Knocknaheeny project on which site work began in 2005. This evolved from a regeneration master plan developed by WMA in association with FGC which was adopted in the 2003 Cork City Development Plan having been nominated for the prestigious international Grand Prix de l'Urbanisme in 2002.

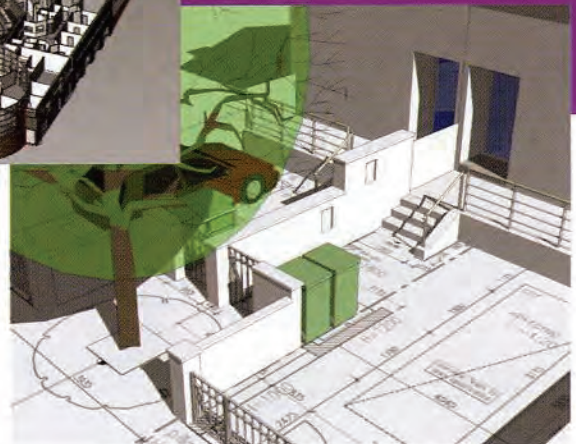
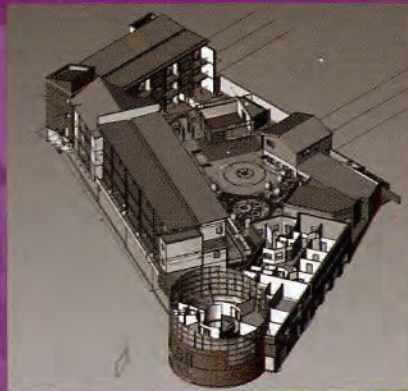
The implementation of the latter involves the improvement of 78 existing dwellings and the construction of 12 infill housing units together with a new complex incorporating 21 sheltered housing units as well as health and community facilities. These include a doctor's surgery, community and family facilities, Health Service Executive facility and City Council Area Housing Offices. It also embraces the upgrading of road and public infrastructure including car parking and other amenities. An associated project includes the integration of the existing VEC Community College with the Construction of new Youth Service facilities and a creche.



"The whole concept endeavours to create a sustainable community model that also addresses the demographic trends in the area," John Morehead explains.

WMA has been using AutoCAD® Architecture (formerly Autodesk® Architectural Desktop) on these and other projects. "The value for us is that AutoCAD Architecture integrates the entire information production process. There is a logical and structured discipline and a styles library and building catalogue for every project. In addition to the significant time saving, the value of having a consistent, standardised WMA style approach is significant. For us, it efficiently allows the co-ordination of multiple project elements and buildings at various levels. Yet all of this is essentially straightforward for each user because it is structured within the software."





The firm made a conscious decision to make a major time investment up front in developing its own style and specifications catalogue for AutoCAD Architecture as well as the project collaboration set-up for the professional team. "It took nearly three months and in fact we are continually streamlining it. Indeed a recent review of the system has ironed out a number of inconsistencies that had developed within the project teams."

"But that effort paid off from the beginning, really, because we had new staff coming on board who had never used AutoCAD Architecture or indeed any Autodesk software. Yet they were comfortable and very productive in a matter of weeks precisely because the system had been logically and comprehensively built for our working processes." It quickly became apparent, for example, that the Project Navigator tool was a valuable and even essential tool for all users precisely because the initial set-up can create a robust project structure from the outset.

Similarly, the Component Manager tool draws on the software standard library of elements such as standard steel sizes, and timber components. "This is particularly useful for detailed section drawings, almost automating parts of the work while also feeding into the overall 3D model. It is intuitive and easy to use, so a lot of time is saved over the course of any project. In time a useful component library specific to the practice can be developed."

*"Good visuals are the key to explaining and 'selling' any design."*

The scheduling capabilities built into AutoCAD Architecture were already known to the firm and an important element in the decision to move to it as a common platform for its projects. "We were accustomed to 3D design for many years, regarding 2D CAD as a draughting tool. When we started using AutoCAD Architecture in 2004 we knew it was a mature product for a team environment that would support the wide-ranging and mixed nature of the Knocknaheeny regeneration masterplan. Our FGC urban planning partners were using it also, so the collaborative and project scheduling tools were mutually valuable from the beginning.

"It is simply invaluable in an urban planning context to have the ability to get counts automatically, embedded within a concept drawing, of a wide range of elements such as on-site / off-site car park numbers, affordable housing units, schedules of bedroom accommodation, etc. The intelligent space scheduling can be exported directly to a spreadsheet with an automatic graphical representation of the spaces included."

John Morehead was also very aware of the high quality imagery that visualisations in AutoCAD Architecture would bring to the community consultative process that is an inherent element in any urban renewal project.

"Good visuals are the key to explaining and 'selling' any design. But even more important is the underlying power that means that you always have a whole project, 3D view and the knock-on effects of any changes can be quickly seen and appreciated. Modelling the actual site in Knocknaheeny from survey data, for example, was initially quite complex. But then the conceptual modelling was quite quick to generate and as the project developed and the proposals grew more detailed it was straightforward to incorporate them in the overall model—and indeed to retain the versions and design stages. The 3D DWF format is a super development for visualising schemes and advanced stages of projects efficiently with a very acceptable level of detail."

He instances the sheltered housing units and community facilities where the design and specification detail went through a development and consultation process. But when the final version was agreed it was actually simple to replicate it throughout the drawings and work out variants, such as the caretaker's apartment.

Above all, the use of a single software platform for all processes enables a consistent project management structure in WMA. It saves professional time as well as re-drafting and importing/exporting files with format conversion. It ensures consistency and efficiency. As John Morehead sums up: "AutoCAD Architecture puts manners on everything!"

By Leslie Faughnan