

# The Medieval Dublin Project: A Case Study

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## Abstract

*This paper provides an overview of the Medieval Dublin Project. It covers the development and release of the DVD 'Medieval Dublin: From Vikings to Tudors (Schools Edition),' and outlines the major virtual and interactive features developed for that release. The paper also covers the collaboration that took place between the DVD development team and the academic community and discusses the ways in which 3D visualisations, timelines, interactivity and character-based storytelling were used to present Dublin's archaeological heritage in an engaging and interesting way.*

**Key words:** MEDIEVAL, DUBLIN, INTERACTIVE, 3D, TIMELINE, VISUALISATION

## 1. The Medieval Dublin Project

With continuous settlement stretching back over 1,000 years, Dublin is a city with a rich historical legacy. Over the past 3 years, work has been underway to bring this legacy to a fresh, young audience through the multimedia project *Medieval Dublin*.

This paper provides an overview of the Medieval Dublin Project, outlining the main virtual and interactive features, the nature of the collaboration we've had with the academic community, and the aspects of the project that we feel bring a level of innovation to the presentation of archaeological heritage.

The Medieval Dublin Project is a multimedia enterprise that covers major events and aspects of life in Dublin between 800 AD and 1540 AD. It encompasses a website and a series of DVDs, mobile phone downloads and other media formats.

The project began in 2005 when Dublin City Council commissioned an educational DVD on medieval Dublin for use as a teaching aid in primary schools. At that time, 3D visualisations had become sufficiently sophisticated to portray historical sites in realistic detail. At the same time, the wealth of historical and archaeological research published on medieval Dublin meant that there were significant knowledge and resources available to develop such a project.

The Schools Edition of the Medieval Dublin project was published in 2007 (see Fig.1.1). This is a two-disc multimedia experience that uses 3D animation, video and interactivity to illustrate many different aspects of Medieval Dublin. Cross-referenced against the primary school history curriculum, it was developed for the 8-12 year old age group.

The first disc is known as the 'video experience.' It contains five short films (of approximately 7 minutes each) covering the City Walls, Christ Church Cathedral, Dublin Castle, Saint Mary's Abbey and a Medieval Streetscape. In each case, a short historical narrative is accompanied by architectural visualisations and 3D characters and scenes.



Figure 1.1 Dublin Castle, Medieval Dublin Schools Edition (1997)

The second disc –the 'interactive experience'– explores medieval Dublin using an interactive 3D model and timeline. This provides users with a continuous aerial view of Dublin from 800 AD to 1540 AD. As users scroll along the timeline, they can watch Dublin grow from a small Viking settlement into a prosperous medieval city.

At key dates along the timeline, hotspots appear on the interactive map. These contain interactive scenes and quick quizzes that illustrate important events, stories and characters from the period. By clicking on a hotspot, viewers learn about an event that happened at a certain period such as, for example, the Anglo-Norman invasion of 1169/70, the Black Death in 1347 or the emergence of the Reformation in Ireland in 1539.



Figure 2. *Viking women & children, Medieval Dublin interactive disc*

There are thirteen hotspots in the Schools Edition. In addition to learning about key historical events, social and economic and lifestyle areas are covered too. So, users can explore a Viking camp, the interior of a Viking house or read the diary entries of a medieval monk. They can also attend a medieval fair, learn about debtor's prisons, gallows and the pillory, or discover how medieval medicine, musical instruments, food and games influenced life in the period.

As part of the interactive experience, users can also launch 'The Dublin Daily' – a newsletter with special articles about life in medieval times.

With real-life characters, striking visualizations, historical maps and 3D models, the Schools Edition shows medieval Dublin in an innovative and engaging way.

Reaction to the DVD release was extremely positive. School children enjoyed the narratives, characters and interactive animations. Teachers praised the way in which it brought the medieval history curriculum to life. And, in a letter commenting on the DVD, Irish Minister for Education Mary Hanafin described the DVD as 'a very useful resource for children' and 'a model for standards of accuracy and presentation in this area.'

This year, a new General Edition is being released. We're adding new videos, hotspots and other exciting features. We're also developing a sophisticated interactive game for deployment over the web.

In researching and developing the content for the Schools Edition, we strived to capitalize on every advantage that modern technology had to offer. We wanted to create a flexible, engaging educational environment that represented historical and archaeological data in the most exciting and innovative way possible.

## 2. Innovations in Archaeological Presentation

### 2.1. The Interactive 3D Model

The main feature of the Medieval Dublin project is the interactive 3D model. This was inspired by the work of

Professor Howard Clarke who, in 1978, published a map of medieval Dublin superimposed on a modern Ordnance Survey street-plan of Dublin.

This outlined the location of the medieval walls in the modern city, highlighting the enduring legacy of medieval life in everything from street patterns to urban place names. It has proved an invaluable resource to researchers ever since.

The creation of the model enables us to see not only how the city appeared at any given time during the medieval period, it also illustrates how the city developed over time. Thus we see how the earthen embankments of the Vikings gave way to the first Anglo-Norman wall. We also see how the wall was extended to the north, and how the land reclamation projects of the 13<sup>th</sup> century dramatically increased the size of the city.

The model also facilitates understanding of related factors too, such as the steep rise in population in the 12<sup>th</sup> and 13<sup>th</sup> centuries as evidenced by the emergence of settlement outside the city walls.



Figure 1.3 *Interactive 3D model illustrating early medieval period*

To build the model, an extensive amount of research was conducted and incorporated. For example, archaeological reports from excavations done in the centre of Dublin were used as source material for the digital construction of various different types of medieval house. The layout of these houses as they were found was also mirrored in the model. Similarly, historical records detailing the appearance and development of buildings such as Dublin Castle, Christ Church Cathedral and St. Audoen's – the oldest medieval parish church in Dublin – were consulted and their details included.

### 2. 2. Use of Before-and-After Visualisations

The large number of well-preserved medieval sites that exist in Dublin mean that before-and-after 3D visualisations play a central role in the Medieval Dublin project. With the power to instantly reveal the hidden architecture beneath our feet, a well-executed visualisation can bring history to life in a unique, compelling way. In terms of illustrating the growth of Dublin, the visualizations have a number of uses. They can effectively

illustrate the original context of an architectural ruin, such as is the case with Lamb Alley.



Figure 1.4. Interactive 3D model illustrating late medieval period

In some cases a total transition to the past is most effective (e.g. Dublin Castle) whereas in others there is educational value in keeping some aspects of the modern environment to illustrate, for example, the different ground levels between the medieval and modern city. (e.g. Wood Quay, Isolde's Tower). This is particularly appropriate given the role played by silting and land reclamation in the development of Dublin. Also, by placing contemporary buildings alongside medieval ruins, we get a sense of history living around us, of occupying the same place at different points in time. This can have a powerful effect on the viewer.

The visualisations are proving to have other uses too. As part of the Medieval Project we will shortly roll out a series of interactive historical walks covering the key medieval sites in the city. Visitors to Dublin will soon be able to download video segments to their mobile phones and then watch these visualizations whilst actually at the sites. Plans are also underway to place certain video presentations in situ, demonstrating the former appearance and uses of sites to modern passersby.

### 3.3. Population Counter & Street-tracker features

Recently we have added two new, innovative features to the Medieval Dublin project. These will be released for the first time in the General Edition this summer. The first is a population counter and the second, what we are calling a 'Street-tracker' window. The population counter is aligned to the growth of the city, conveying the steady increase in population and illustrating the impact of the Black Death in 1347. The street-tracker window allows users to overlay a current map of Dublin over the medieval one, so they can trace for themselves what existed on the site.



Figure 1.5 Fishamble Street, 'before'



Figure 1.6 Fishamble Street, 'after'

## 4. Innovations in Storytelling

Another aspect of the Medieval Dublin Project involves the use of innovative modern narrative formats to tell historical stories. To appeal to our young audience in the Schools Edition we developed a diary to illustrate the daily life of a medieval monk. We also created an online newspaper, the Dubh Linn Daily, and a virtual house tour similar to those seen on many modern websites.

As we develop content for Medieval Dublin, we are constantly seeking new and interesting ways to tell historical stories. Frequently, we develop characters and simple visuals to help relate complex events in an easy-to-understand way. The story of Lambert Simnel is a case in point. Lambert was a ten year old boy who, in 1485, was at the centre of a plot to challenge the English Crown.

To tell the story, we used a simple visual device familiar to most children, a snakes and ladders board. Placing this at the centre of the narrative, we were able to tell the complex story of the rise and fall of Lambert Simnel in a clear, simple and engaging way. This type of visual storytelling is a significant feature in the forthcoming General Edition.



Figure 1.7 Lambert Simnel, 'snakes and ladders' board

## 5. Innovation through Collaboration

The Medieval Dublin project would not be possible without the ongoing participation of a large number of experts who contribute their time and expertise to key elements of the project.

In order to develop the Schools Edition, for example, a Steering Committee of fifteen stakeholders was assembled by Dublin City Council to verify the accuracy and integrity of all content. This included representatives from Dublinia, Christ Church Cathedral, the Office of Public Works, the National Museum of Ireland and Dublin City Council, as well as Professor Howard Clarke from UCD who generously agreed to participate.

Managing this large group effectively was a significant challenge. Drawing on our experience in developing e-learning products, we created a review cycle that directed our content to relevant experts at key points during development. This maximised the expertise of the group while minimising the time each individual had to put into the project. In this regard we were ably helped by two additional experts; archaeologist Linzi Simpson and historian Emer Purcell.

The collaboration was rigorous, at times challenging, but ultimately highly successful. Academic accuracy was at all times paramount, and there were a number of meetings when aspects of medieval history and archaeology were discussed at length.

At times, fascinating collaborations took place between scriptwriters, 3D developers and steering committee members as the best ways to narrate and illustrate history were debated. This was particularly the case in the later stages of the project, when the 3D model of the city was nearing completion.

A variety of academics and professionals made comments on the models, enhancing their accuracy. In one instance Stuart Kinsella, representing Christ Church Cathedral, found that he was looking at former aspects of the church that had not been seen for hundreds years. Stuart was in the process of researching a PhD on the architectural history of the cathedral, and we were glad to provide still images of the 3D model cathedral for inclusion in his thesis.

Others had similar experiences, with images of Isolde's Tower, the river Liffey prior to reclamation and the interior of a Viking House explored in detail for the first time onscreen. We found that scenes rendered in realistic 3D provided a dynamic and engaging firsthand experience of the medieval city.

## 6. Medieval Dublin & Virtual Archaeology

The collaboration with archaeologists and historians leads us to the question; to what extent does the Medieval Dublin Project exemplify the principles of virtual archaeology?

That depends, perhaps, on your viewpoint. For example, content for the Schools Edition was previewed and signed-off by the experienced historians and archaeologists already described. It is based on a range of primary sources (e.g. John Speed's map of Dublin c. 1610) and extensive research into numerous academic publications. This research was then carried through to the DVD in significant detail (for example, extra care was taken to accurately reflect the changes that occurred in Viking and later medieval house types).

The Schools Edition also facilitates classroom teaching not only of its target group, but also of secondary school students. And early renders were used in undergraduate university classes on the same subject.

So, for these reasons, we believe the Schools Edition and indeed the Project to be a useful and viable contribution to archaeological endeavours. However, we also acknowledge that the Medieval Dublin Project does not provide all the benefits that virtual archaeology entails. Currently, for example, all visual data is pre-rendered and therefore it is not possible to freely manipulate the city to create any viewpoint. Similarly, while construction of the model was done with great care and attention to detail, it may not follow strict modes of practise such as the London Charter or the Dublin Core Metadata standard.

## In Summary

Of the many definitions and explanations of archaeology that exist, one caught my eye recently. It defined archaeology as the *'systematic collection, cataloguing and interpretation of physical remains left behind by human actions at some time in the past.'*

Through our work with the Steering Committee we have arguably begun to reflect the 'collecting' and 'cataloguing' aspects of this definition in our virtual medieval environment. Fresh 'interpretation' however, that is interpretation based on the 3D map and models alone, has not yet been undertaken.

It is certainly conceivable that we could model the data we have created to generate more detailed environments, enabling academics to take a step further and attempt to fill in the gaps that remain missing.

We believe we have seen glimpses of what might be possible in this regard through our collaborations with Stuart Kinsella, Howard Clarke and Linzi Simpson on the Schools Edition of the DVD. As we continue to develop the Medieval Dublin project over the course of this year and beyond, we would welcome any opportunities to pursue this exciting, intriguing possibility.

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