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Robison, Elwin C. "Architecture, Graphics, and the Net: A Short History of Architronic, a Peer-Reviewed E-Journal." The Public-Access Computer Systems Review 7, no. 3 (1996): 5-12.  
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## 1.0 Introduction

Although many electronic journals are published on the Internet, the history of Architronic: The Electronic Journal of Architecture is unique because of the graphic nature of architectural communication. [1] Published by the School of Architecture and Environmental Design at Kent State University, the journal was begun as an experiment to determine what could be communicated about architecture in a text-only environment. However, with the introduction of sophisticated Web browsers, the focus of the journal has changed to experiment with what can be communicated about architecture with combinations of text, still images, video segments, and audio segments.

## 2.0 Initial ASCII Version of the Journal

Although graphics are desirable in virtually any publication (just look at what's happened to your hometown newspaper in the last decade), the importance of graphics for communicating concepts and theories of architecture posed a formidable challenge to the faculty and staff who created Architronic in the early fall of 1992. This effort was spearheaded by Alfred Willis, who was then the Architecture Librarian at Kent State University.

We had several motivations for establishing an electronic architecture journal. One was the belief that paper journals would eventually be replaced, and that this was an opportunity to help shape the future of electronic journals. Another was the challenge of discussing architecture without the use of graphics. Finally, we were seduced by the possibility of publishing the first architecture electronic journal (perhaps visions of Sir Edmund Hillary standing on the summit of Mt. Everest danced in our heads).

Our initial meetings resulted in a number of critical decisions. First, we realized that the only financial support we could expect from the University was to "piggyback" on its infrastructure--we employed instructional computers after hours, used departmental phone lines and supplies, and donated our own time to the endeavor. Consequently, we never seriously considered charging for subscriptions to Architronic. Instead we liked the concept of a free journal (in the monetary sense) that was likewise free from outside controls. Another initial decision was to create a refereed journal. While one of the main virtues of the Internet is the ability to translate ideas immediately without controls, we felt that, by their sheer mass, large quantities of inaccurate or trivial information tend to bury useful items. Although they are wonderful services, we did not want to run a bulletin board or a discussion group. Instead,

we wanted to create a substantive journal that would help define the nature of electronic architectural communication on the Internet.

One of the advantages we saw for a refereed journal on the Internet was the ability to include commentary along with an article. We assumed that readers would write in comments or critiques of material appearing in Architronic that could be appended to the article in question, which would create a refereed dialog. Although the comments we have received give insightful critique to both the medium of the journal and the content of the articles, this has not happened to the extent we had hoped.

Although graphic capabilities did not exist in the earliest issues of Architronic, page layouts were designed to be as graphically pleasing as possible. A logo was designed using ASCII characters, and page layouts were made using a 60-character line, because most terminals will accept at least that wide a line. [2] Each line was "typeset" to justify margins right and left so that within the confines of the ASCII format the text was as well composed as possible. In our second year of publishing, we made limited graphics available through the FTP protocol, but few readers accessed these graphics.

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What we had to offer readers with these early issues was speed of dissemination. A great deal of time was saved by sending potential articles to referees via the Internet. Rapid electronic communication was especially helpful for the Reviews section of the journal. It often takes several years for print journals to solicit, edit, and publish reviews. By contrast, we managed to publish a review of the book Architectural Technology Up to the Scientific Revolution before it was available in stores by using a blueline prepublication copy. [3] In general, the journal publishes reviews of books or CD-ROM products that are less than one year old. Of course, we sometimes still rely on phones, fax, and overnight mail; however, as more scholars utilize the Internet, this is occurring less frequently.

### 3.0 Multimedia HTML Version of the Journal

With the introduction of Web browsers, such as Mosaic and Netscape, the journal has changed substantially. Using the Web, we can include graphics that can be easily retrieved by readers as well as video and audio segments. This is especially important in the field of architecture, since still photographs communicate only a limited amount of information regarding a three-dimensional space. (We still publish an ASCII version of Architronic for readers who do not have access to a Web browser.)

As a test case, I wrote a building review using short video segments in May 1993. [4] This experience revealed two vital points. First, for video to be effective in describing architecture, the camera must move through the spaces. Standing still and panning a scene does not effectively utilize the potential of the medium. Second, it's difficult for the author of an article to release the responsibility of videotaping to another person. There are many variables in the video medium, and the author has a clearer idea of what would best support the

article's premise.

Our initial efforts in using video have not been followed by a plethora of journal submissions using this technique. It requires a significant conceptual change for authors to incorporate video in their articles. Even if the editors know how to use video effectively, communicating this to potential authors is difficult. Based on our experience, it may take a few years before the scholarly community becomes sufficiently conversant with multimedia to take full advantage of its possibilities.

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Paralleling the use of video is our inclusion of audio in the journal. An article published in 1995 included sound within an architectural space. [5] The sense of volume these sounds communicate add to one's understanding of the nature of the building, but the sound, taken from a video camera, was not of high quality. One of the challenges we face is to devise ways to record audio tracks in buildings using inexpensive and widely available equipment that results in high-quality sound.

#### 4.0 Internet Bandwidth Limitations

A significant challenge faced by all electronic journals is the speed of the Internet. Currently it takes up to ten minutes for international subscribers to download our largest graphic files at peak times. It is hoped that technological improvements will increase transmission speed to the point where downloading files will take no longer than turning a page in a print journal. A parallel concern is the amount of traffic on the Internet. If the number of individuals connecting to the Internet outpaces technical improvements, there is a danger of the Internet looking like a midtown Manhattan street at rush hour. Distribution of Architronic CD-ROM disks is one possible solution to Internet access problems. The Architronic board will be carefully monitoring the performance of the Internet.

#### 5.0 Article Submissions

In many respects, publishing an electronic journal is no different than publishing a paper journal--the key is acquiring well-written, insightful articles. Currently, about one third of our article submissions are unsolicited. Board members solicit the rest by actively seeking out scholars whose research areas have particular application to electronic media. With a significant increase in the numbers of unsolicited articles, it is certain that the board would vote to increase the number of issues published each year. However, no matter what the number of articles solicited, the range of media available creates additional opportunities and challenges.

A major goal of the editorial board is to make potential authors aware of the media possibilities afforded by Architronic, and to help them take full advantage of them. Conversely the board would like to encourage readers to be more interactive in their response to the journal.

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## 6.0 Production Process

Issue production is relatively quick once the edited articles are reviewed and proofread. We have a student worker who puts the articles into HTML format and imbeds anchors for the illustrations and references. Our computer specialist assists during this phase with any unusual or special formatting required. Then the editor and a computer specialist spend from four to eight hours proofreading, checking formats, inserting foreign language diacritics, and otherwise checking for errors. This work does not have to be done in tandem, and, theoretically, it could be done at remote locations; however, since it is most often done late at night, it's more pleasant and productive to have the staff work together so that they can discuss various issues and chat for a minute while resting their eyes from staring at computer screens.

Page layouts are a compromise between what we would like to do graphically and what will download rapidly from the Internet. For example, we include small thumbnail versions of graphics on the text pages so that readers can get a quick idea of what is being communicated. If the reader wants to look at the graphic in more detail, he or she merely clicks on the thumbnail version to pull up the full-size graphic. This enables quicker downloading of text, while still including graphic images side by side with the text. Because we include these small graphics with the text, we break the article into discrete pages. This reduces the download time so that readers can check out the first page and decide whether or not they want to continue reading without waiting an inordinate amount of time.

## 7.0 NEA Grant Support

Architronic is benefitting tremendously from a grant from the National Endowment for the Arts. The journal now has a production machine dedicated for its use, and a mailing campaign is underway to increase awareness of the journal among professionals in the building industry. In addition, key members of the board were given release time from teaching to concentrate their efforts on the journal.

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A scholarly journal survives because readers have confidence that the material published is accurate and timely. Similarly, its authors have confidence that their peers will read the journal, and that acceptance by the journal will be viewed as a meaningful peer review of their work. Alfred Willis' successful negotiation with the Avery Index to index Architronic articles was an important early factor that enabled our creation of a refereed journal. It may be that the most beneficial aspect of the NEA grant is not the money involved, but rather the imprimatur of acceptance it has given the journal. It is too soon to evaluate the full effect of the NEA grant on Architronic, but we expect this support to move us several years forward in terms of our development.

## 8.0 Use Statistics and Future Trends

A unique feature of any electronic journal is the ability to track the numbers and locations of persons accessing journal

files. Currently, there are over 200 unique machine addresses accessing Architronic files daily, with about half of those readers accessing the Gopher version of the journal.

By analyzing machine addresses, we can get a rough idea of the geographical distribution of our readers. About one third of our readers are from outside the United States, concentrated in Europe and Australia/New Zealand. However, we have significant numbers of readers from the rest of the globe.

Large numbers are architectural educators and/or students (discernible through university machine addresses), but about one quarter of the readers are accessing Architronic through commercial network providers. This percentage is up dramatically from a year ago, and from limited correspondence we know that some of these subscribers are practicing architects and engineers (or they work in related businesses). Since most architect's or engineer's offices have computer design equipment capable of running Web browsers, all that is required for these individuals to access Architronic is an Internet connection. Importantly, these individuals will be able to read Architronic from their primary workspace--their computer. Consequently, we expect this segment of our readers to grow significantly, with increasing numbers of practicing professionals reading Architronic.

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Analysis of our readership suggests other future trends. One is that the international aspect of our readership is likely to continue and expand. Second, the fastest growing segment of our readership is composed of nonacademic users, who access Architronic through commercial Internet providers. Since many contributors to Architronic are also readers, we expect that the types of articles submitted will focus more on the practice of architecture, reflecting the backgrounds of these new readers. The challenge for the Architronic board is to meet the needs and interests of this changing worldwide readership. Through these efforts, we will continue to contribute to the future evolution of electronic publishing in the field of architecture.

#### Notes

1. See <URL:http://www.saed.kent.edu/Architronic/>.
2. See <URL:gopher://arcrs4.saed.kent.edu:70/00/Architronic/v1n1/v1n1.01>.
3. See <URL:http://www.saed.kent.edu/Architronic/v2n1/v2n1.11.3.html>.
4. See <URL:http://www.saed.kent.edu/Architronic/v3n1/v3n1.05.html>.
5. See <URL:http://www.saed.kent.edu/Architronic/v4n2/v4n2.03p01.html>.

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## About the Journal

The World-Wide Web home page for The Public-Access Computer Systems Review provides detailed information about the journal and access to all article files:

<URL:<http://info.lib.uh.edu/pacsrev.html>>

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