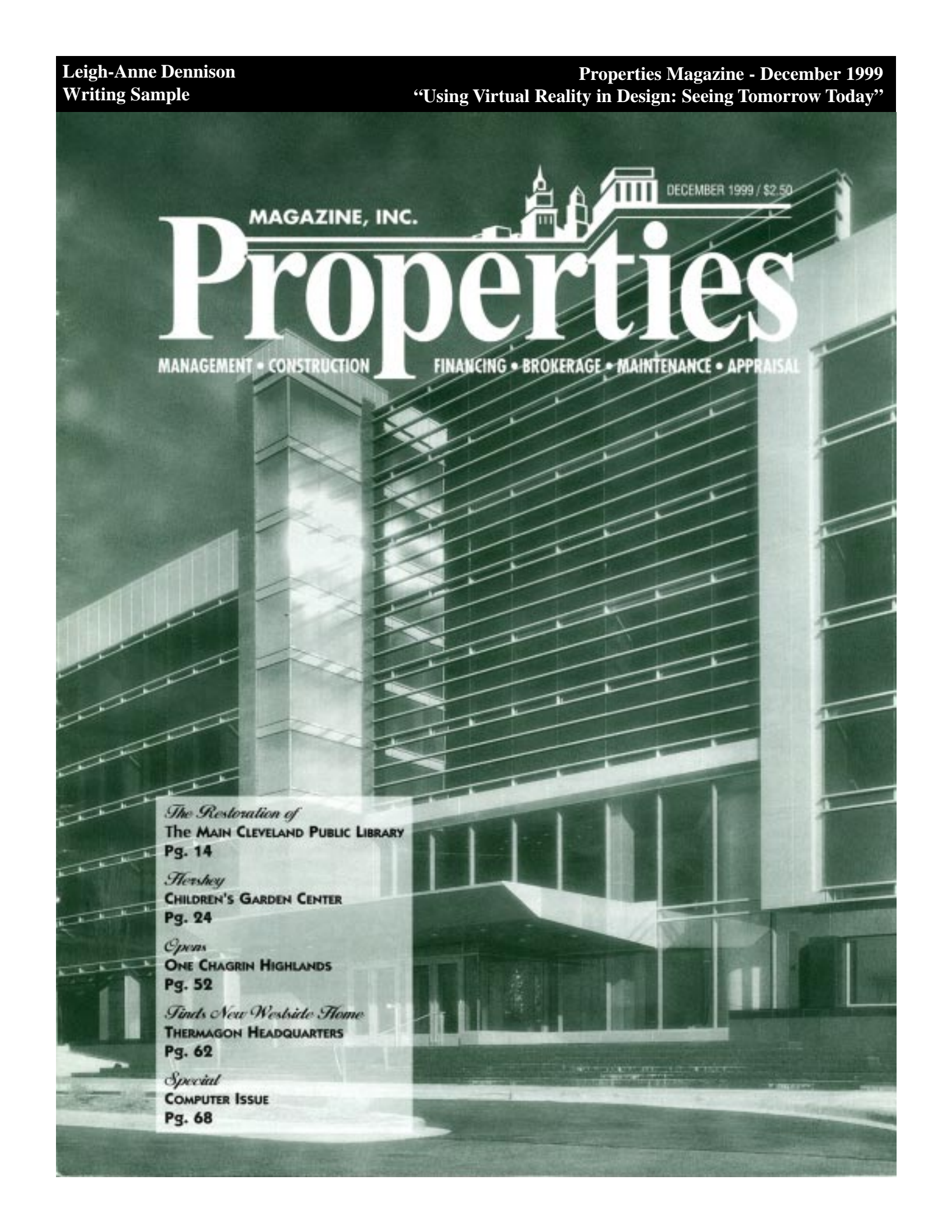


Leigh-Anne Dennison
Writing Sample

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"Using Virtual Reality in Design: Seeing Tomorrow Today"



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Using Virtual Reality in Design: *Seeing Tomorrow Today*

By LEIGH-ANNE DENNISON
with KA, Inc., Architecture in
Cleveland, Ohio

Say "virtual reality" and most people probably think of Hollywood. A plethora of films have come out over the past several years either completely created using digital 3D animation techniques or containing monstrous special effects which use digital technology to either add to or remove from scenes.

Perhaps the term conjures images of large silver gloves and black glasses wired to a computer for the "ultimate" video game experience. But, virtual reality and 3D animation go beyond fun and games and bring the future into the present.

With the aid of computer software, architects, interior and graphic designers can harness the capabilities of digitally created virtual reality to impact their design process and their client's end product.

It was not that many years ago that the computer joined with paper, pencil and scale as a tool of the architectural trade. Now, computer-aided design (CAD) is indispensable for design and drafting purposes. And, with software programs improving by leaps and bounds while expanding into newer areas, CAD are taking the process to a whole new level.

Previously, architects and designers relied heavily on flat, two-dimensional drawings and their client's imagination to communicate their design of the end product. Innovations in software make it possible for the entire design process to take place in a virtual, three-dimensional environment.



"No longer does the design proceed from plan to section to elevation, be more or less complete, and then require translation via a perspective or architectural model in order to have something that is easily understood by designer, client, and tenant alike," says Darrell Pattison, head of Design at KA Inc., Architecture. "An AutoCAD plan can be taken immediately into a 3D wireframe study," he explains. This Cleveland firm is having great success utilizing this newest tool of the industry.

Architects and designers add materials, textures, and colors as well as individual components such as columns, furniture, fixtures, and floor and graphic patterns. Standard commands alter these elements, vary their number, shape, color or other characteristics, as needed. The insertion of people, plants, and vehicles bring a photographic realism to the 3D plan.

Noel Cupkovic, a vice president at KA has been working on a project where this type of photographic realism has been an invaluable tool. "We are working on a mall project in the south, Arbor Place Mall, for CBL, which requires a large variety of finishes, fixtures and amenities in conjunction with its 'arbor' theme," he says. "The 3D software makes it possible for us to demonstrate to the client precisely how each finish and fixture will look—we can even compare and



contrast different selections easily to help the client make a confident decision."

Higher level software programs also allow architects to add and manipulate light levels—simulating both artificial and natural light through a variety of different openings of properly proportioned windows or skylights—accurate to both geographic location and season. Further connection to the geographic location includes the ability to place the building's vir-

tual image into a scanned image of the actual project site.

As the desired elements are assembled into an animated CAD model, each factor can be viewed from every angle for study by the architect and the project team. With simple manipulation of these varied materials, it is possible to show a multiple of themes and variations on the project allowing greater flexibility in design and offering the client more easily observable choices.

"Occasionally a client sees an image on the computer screen and doesn't like some element of the design," says KA's Senior Designer Chris Garrison. "I'm not bothered by it — I'd rather have him not like the image on the screen, which we can modify to match his expectations than have him not like it once its in the ground — when there's nothing we can do."

Garrison feels that this gets the client/developer more involved in the design process. It is a validation of the 3D, CAD process. Because the designers can start with a still image and move into an animation of the project — viewing it from all angles — the client is treated to a "walk-through" of the project before any construction ever begins. With a more tangible perspective, the developer can make more accurate decisions.

Further, it reduces the risk of communication problems that might occur; the buildings proposed aesthetics are right there on the screen — there are no guesses, the decisions can be made based on real knowledge. This type of virtual tour can also benefit the architect as items potentially detrimental to the design can be examined and adjusted prior to construction.

The architect and developer can also utilize the 3D stills and animated sequences to more quickly expedite approvals from city agencies by reducing the "gray areas" of conventional 2D plans. A further benefit to the developer of this type of virtual reality pre-

sentation is the sales tool it becomes. Due to the faithfulness of the 3D images, prospective tenants see the space represented accurately, proportionally and from all perspectives. They need not interpret and imagine the project based on two-dimensional drawings — there's no guesswork involved.

“Something a mall tenant might have considered as an unacceptable visual obstruction in a 2D-drawing format, can be seen in the animated format to be far less problematic to the space as they make the virtual walk through of the space,” says Pattison. “That’s an important consideration in the retail business.”

The retail market is a primary focus of KA Inc., Architecture, and as a result, Pattison has spent a good deal of time in meetings with developers and prospective tenants alike. “The fact that I can bring alternatives to the table by utilizing the software without adding much time to the project schedule, or even make modifications on the fly is invaluable,” says Pattison. “It used to be you’d roll up your drawings, go back to your office, come back a week later with new drawings and run the risk that you still wouldn’t have the answer they were looking for.” While he admits it’s not entirely a thing of the past, the software advances have certainly helped.

Now, it’s no longer back to the drawing board, but back to the computer and in this way back to the future.

