Overview
GeoWall systems are relatively inexpensive, immersive 3-D visualization toolsets.

Hardware
GeoWall hardware includes a high performance PC with special graphics card, projectors with light polarizing filters, polarized light preserving screen, and polarized 3-D glasses.

The 3-D Effect
The GeoWall projects left/right stereoscopic imagery split between each projector. Polarized light filters coupled with polarized 3-D glasses allow each eye to see a separate, slightly offset image. This produces a virtual 3-D effect for the viewer.

3-D Content for Teaching
3-D content developed in the Department of Geography is an effective teaching and learning tool. Content is used in several large undergraduate Geography courses each semester.

Virtual Field Trips
3-D virtual field trips are excellent teaching and learning tools for students in large classes where fieldtrips are not feasible.

Visualizations
3-D visualizations help students grasp geographical principals such as the conceptualization of contour lines on a topographic map.

Google Earth Virtual Tours
Recently, a free plug-in was developed that allows for stereoscopic 3-D viewing of Google Earth content. Google Earth allows viewers to create customized, off-the-cuff virtual tours. This has proved very popular in our outreach presentations.

Presentation to Horace Mann Elementary School Students
• About 75 elementary school students from Horace Mann School in St. Paul, MN attended GeoWall and other presentations at the University of Minnesota in January 2008.
• Students showed a great deal of enthusiasm when viewing geographical content in 3-D.
• After the presentations, students sent thank you letters and even published a small article and photos on their school website.

Horace Mann School website excerpt

Presentation to OLLI Senior Citizens Group
• In February 2008, 3-D content was presented to a group of senior citizens from the Osher Lifelong Learning Institute (OLLI) as part of a seminar entitled “What Tree Rings Can Tell Us”.
• These “students” were also very enthusiastic about the 3-D content.

OLLI members at the GeoWall presentation

Develop New Content
Example content in development is a 3-D virtual tour of Minnesota’s Wabasha County which highlights its special karst* features. This new virtual tour integrates Google Earth and stereoscopic photos.

Program Sustainability
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University Student Projects
Expand GeoWall for student projects - especially for students in the University of Minnesota Masters of GIS program.

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