Robert Remembers: The Ukranian Egg
by Robert McDermott

For more than 28 years, a 3 story high Easter egg monument has dominated a stretch of Canadian highway. This is the story of the Vegreville Ukranian Easter Egg’s origin in Utah.

Crafted with precision and expertise, it stands today not only as an icon of a community, but the first complex, full-scale physical structure, starting from a computer model. Another first was the use of B-spline curves in modeling an underlying egg shaped surface; the supporting computer aided design software was written entirely from scratch.

The town of Vegreville, Alberta is the largest Ukranian community in Canada. Steeped in tradition and culture, the town leaders sought a monument to celebrate their heritage. In 1973 they submitted an application to the Alberta Century Celebration Committee to erect a giant Pysanka (Ukranian decorated Easter egg) to commemorate the 100th anniversary of the Royal Canadian Mounted Police. The egg would stand as a symbol of the peace and security brought by the R.C.M.P.

Having secured the funding, the project organizers turned to the actual construction of the egg. They quickly discovered that no one could design a geometric egg shape of the scale they desired. Finally they contacted Ron Resch, a research associate professor and industrial designer at the University of Utah. Resch had been working with geometric patterns and folded plate systems and seemed a likely candidate to solve their design and construction problem.

Before enrolling as a student at the University of Utah, I had met with Ron. I was excited at the idea of working with him and finding a project that would allow me to learn a great deal and produce something of significance. The Easter egg project was the ideal opportunity. It would allow me to combine my existing interests in design, sculpture, mathematics, computer science and computer graphics with wonderful faculty influences to produce a successful project as well as complete my PhD thesis.

The project was an incredible task. The egg project would consist many different steps.

The first step was to find the exact curvature of an egg. At the time there was no such thing as computer aided design software so we produced our own. Jim Blinn (PhD ’78) and I were responsible for the mathematics and computer programming that went into the proposed solution for Ron’s geometric system.

Each sheet of aluminum was engraved with its position and color coding, they were scored for the interior lines of pattern, holes were drilled, and finally the exterior lines of the pattern were cut. Ron modified a robust Gerber plotter to complete the task. I was responsible for producing control tapes that would run the plotter.

During the design process, the Vegreville committee came to Utah to observe our progress. We gave them a tour of the many steps that went into this complex process. We were so proud to show them a computer display that contained the geometric pattern and coloration of the egg. The committee was surprised and somewhat confused when they asked to see the physical model of the egg, which of course did not exist. It took quite a while to explain that the model existed only in the computer.

Each of the 524 star patterns were produced on the plotter in-house, sent to Ogden for anodizing according to the three color code, then

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crated and shipped to Veggreville. The structure itself contains 524 star patterns, 2,208 triangular pieces, 6,978 nuts and bolts, and 177 internal struts. The total weight of the monuments is over 30,000 lbs and stands 31 feet tall.

I, however, did not help with the assembly of the egg. I was stuck back in Utah, turning this project into the basis of my dissertation. Knowing that the work that I had been doing would affect the lives of people so many miles away was a reward in itself.

While working on my dissertation I developed a collegial relationship with Steve Coons. He was a visiting professor at the university and became an advocate of mine and was significant in helping me overcome the struggles I faced in accomplishing my PhD. I was grateful for his wealth of knowledge and his unique approach to the quality of his work.

I can look back today and feel that the work was a job well done. It not only stands as a monument for the town of Veggreville, but as a piece of academic work completed as a computer science graduate student.

It was a great opportunity to work with such outstanding individuals as Jim Blinn, Ron Resch and Steve Coons to create something of visual significance that has lasted through the years.

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