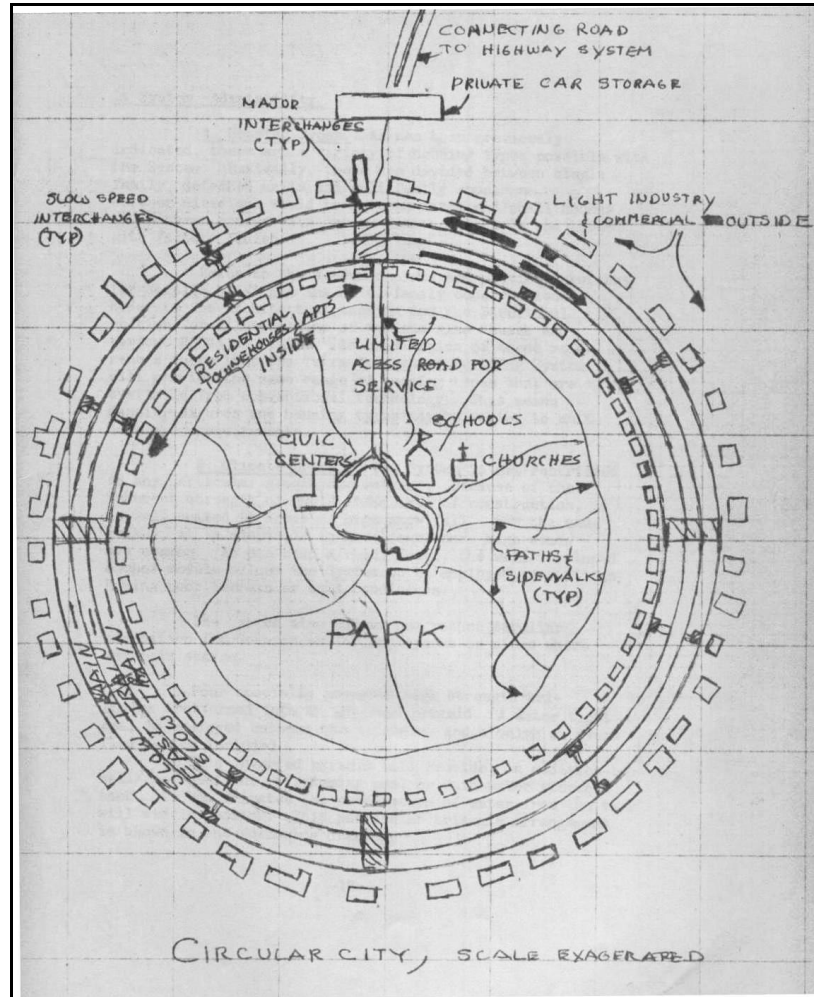


Operation Breakthrough

Within view of the Emerald City...



(From Tetra Triangular Building System Proposal)

Operation Breakthrough was a Great Society program created by the Department of Housing and Urban Development (HUD) to develop technology for affordable housing. Beginning in 1968, one year after the summer of peace and love, and ending in 1978, well into the era of irony, it was generally regarded as a failure. I submitted the Tetra Triangular Building System in 1970.

I was working as a Patent Investigator for the Cryovac Divisions of W.R. Grace. Cryovac made plastic packaging materials for the food industry. The headquarters and R&D labs were located beside a cow pasture just off I-85 south of Spartanburg, about 50 miles from Shelby where I lived. (Most days, I came down the interstate. Once, driving though the fog just north of the Gaffney Peachoid, I glimpsed a hippie couple of

indeterminate gender to trying to have sex standing up under an overpass. On problematical days, I went cross country, through Boiling Springs, past the Gardner Webb campus, over the First Broad River where, looking down at the rock-strewn water, I imagined myself in a canoe going somewhere else.)

My primary job was writing patent applications on inventions developed by Cryovac engineers and scientists. The applications were prosecuted before the U.S. Patent Office by the three attorneys who worked in our office. I also reviewed technical journals and every month or so conducted patent searches at the Patent Office in Washington. In today's terms, I would have been a paralegal, or a clerk.

Although it was never clear to me or to my boss why he hired me (musing at the end of the interview, he said as much), I turned out ok. My applications tended to prosecute smoothly. I wrote one pioneer patent and found an obscure reference in the Patent Office that would probably invalidate a competitor's patent.

Outwardly, it was the best job I ever had. I occupied a large private office and shared one half of a secretary. (Teresa Shelton, the other Patent Investigator, shared the other half.) I ate lunch with attorneys, scientists, and management, going downstairs to the cafeteria every day but Thursday when we went across I-85 to the truck stop. I listened to them talk about their college experiences and well-honed lives. (I had been to Palm Beach Junior Collge which was also the alma mater of William Calley, the murderer of Mi Lai.)

Inwardly, it was one of the most troublesome jobs I ever had. I thought I was going crazy until I left in 1970 to go back to school and get an English degree.

My grandiosity increased in offsetting proportion to whatever else that was going on with me. I became quietly manic. I invented floating cities and upside down bottles for dispensing viscous liquids (like ketchup). When writing patent applications I expanded on the work of the Cryovac inventors. I discovered a way to make plastic bags in copying machines. My boss, the ever-calm John Toney, had to tell me that inventing wasn't my job.

So it was natural that when reading about Operation Breakthrough in one of my journals I thought of the triangular building system (described in Tetra Triangular Building System). It was natural that I would submit a proposal.

Because the basic invention took place back when I worked for Celanese, the task now was elaboration. Following the guidelines of the HUD RFP (Request for Proposal) I wrote a document that described my system. Needing a name, I came up with "Tetra Triangular Building System". The selection was based on the way the words alliterated and on the definition of a tetrahedron, which is a solid with four triangular faces. I got around the fact that my structures could have more than four faces by not using the word tetrahedron. When the document was done, a passive aggressive sick man with a government funded printing business did the copying.

While my proposal was being evaluated, I indulged in complex fantasies. In my mind, as I drove between Shelby and Cryovac, I created a business (where all my friends and family worked). With my extreme wealth I bought and renovated parts of Shelby that were starting, in 1970, to decline. Depending on the day of the week, my wife and I either moved into a house built from tetra triangular components or moved into one of the mansions on South Washington Street. My mother-in-law had her own place. I spent a lot of time deciding which mix of cars to buy – generally, I favored Mercedes Benz.

It took about six months for the rejection to be returned. However, even then, the Tetra Triangular Building System did not die. While visiting the Patent Office on Cryovac business, I took time to search building systems (and airplanes without wings). Finding nothing in the prior art that I thought would invalidate my invention, I started writing a patent application.

By the time I left Cryovac in 1970 to go back to school, I had almost finished the application. Sometime during my Junior year at UNC-Charlotte, I filed the application with the Patent Office.

It took another year to get a response from the Patent Office. This allowed me to continue my fantasies and even to submit the idea to companies such as Alcoa and US Steel – being able then to legitimately claim that I had a pending patent on my invention. Although no one made me an offer, for the month or so that each response was outstanding I was able to indulge in dreams of glory.

The Patent Office didn't reply until after I graduated from college and had a job writing training materials for Cardinal Associates. Although making less money, the work was more engaging and my fellow English-major co-workers more like me. By this time I had found an attorney to prosecute the application. However, because I was happier in my work, and maybe less grandiose, I no longer had the will to keep the Tetra Triangular Building System going. So, when the attorney charged me \$300 to write a letter to the Patent Office I dropped the project and put everything into a box.

Following are excerpts from the Operation Breakthrough submission.

A. Basic Concept- Cont'd.

The triangles may also be any size. However, it is preferred that larger sizes be employed. Triangles with twenty feet sides and those with ten or five feet sides are considered practical. Larger triangles are difficult to transport, and smaller units are not so economical.

The triangles may likewise be constructed of any material. The novel, pre-stressed foam product with resinous or metal skins may be used; metal framing with metal skins; wood framing with plywood exterior sheathing and rock lath interior sheathing may be employed. The triangles may be manufactured as skeletal frame assemblies to be bolted together on-site and covered inside and out with the desired sheathing. Or the triangular modular members may be completely pre-finished including electricals, heating elements, and insulation, thus requiring only assembly to yield nearly completed housing.

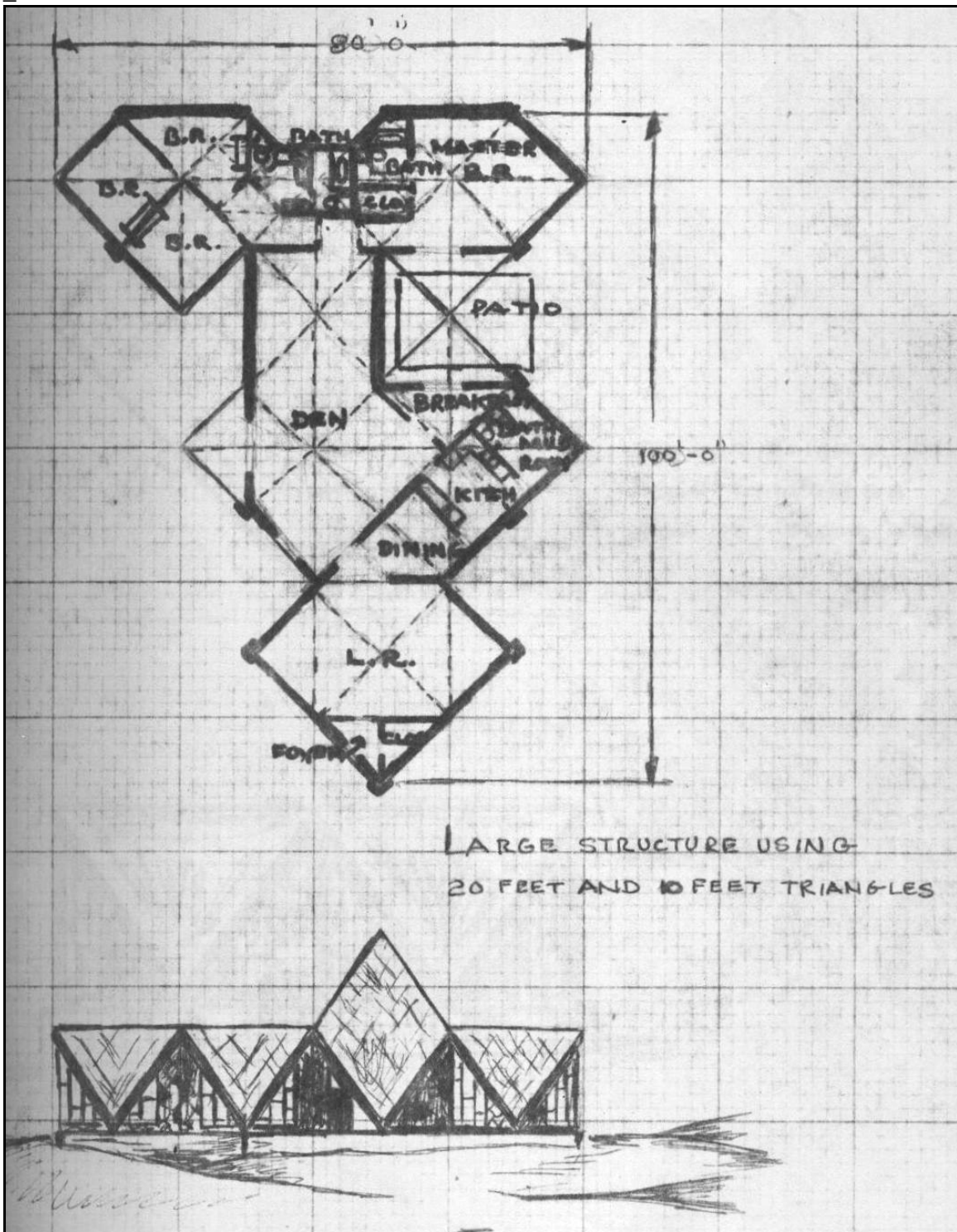
Since the triangles are quite simple, elaborate production facilities would not be required. An operation not much more involved than that required for manufacturing building trusses would suffice. Because of the simplicity, the triangles are also cheap, and result in truly, low cost housing.

B. Architectural. A set of working plans is appended to Part I. The plans show a single family dwelling. The structure described conforms to the Design Criteria of the RFP. It has:

- B1 - Adequate sleeping quarters
- B2 - Adequate cooking areas
- B3- Personal sanitation facilities
- B4 - Adequate recreational and living areas

Although aesthetic judgements are largely subjective, it is felt that the house is quite attractive.

The plans provided are only a sample of what may be achieved with the System. Sketches on the following page(s) show other structures. An examination of these dwellings provide an insight into the architectural diversity possible with the Tetra-Triangular Building System.



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