

THE AUTONOMOUS DWELLING FACILITY

MAY 11 1949

Shelter developed as man earned increments of investible time through extension of his mechanical skill in the accomplishment of his routine survival and emergency preoccupations. From the rudest of natural caves where he competed for shelter on an animal level, his land shelter grew in proportion to his ability to extemporize and finesse with the materials close to hand, rather than by his ability to win unprecedented behavior characteristics of designed construction through intellectual mastery of principles of physical universe, as long demonstrated in his maritime and most recently in his aeronautical frontiers. Expressed originally in his temples and fortresses, his superstitions and vanities were articulated in architectural skills of structural might and orders of superficial majesty. Even though partially divorced of tracery to original meaning, architecture filtered down to dominate individual shelter conceptioning.

Challenged by geographical frontiers and fortified with a magnificently self amplifying knowledge of principles and their interactions, man moved forward in an ever widening stream as he consolidated areas behind him. Frontier shelter, always conceived of materials at hand, stressed the premise of fortress mass to protect him from marauders while improvising immunity against the other variable of energetic nature. As the abilities of geographic frontiers were essentially incorporated into his total routine facility with the conquering of the new world continents and penetration to its poles and flight and radio permeation of its envelope, man's ingenuity turned to industrial frontiers. Here he pushed environment modification far beyond the interior and exterior limits of direct physical perception. But his early superstitions and improvisational conception of shelter remained essentially unchanged.

The North American continent represented, when opened up, the greatest warehouse of natural resources that man had to date attempted to harness. Here in three hundred years he consolidated into one vast production network all of the technical skills developed within his total heritage of man's conscious history. Throughout his industrial expansion into the modification by principle of the microcosm and macrocosm, his shelter remained the fortress built of salvage waste material culled from the land. As his industrial centers grew, source of salvage material receded from point of demand resulting in high labor and transportation cost. Though shelter grew smaller as the size of the individual family shrunk, more and more mechanics of control over the energetic environment compacted into it. The technique of dwelling construction showed no improvement over its predecessors of three hundred to three thousand years past. This one area of technical development remains unconquered in spite of the fact that man now flies faster than the speed of sound, can fly non-stop around the world in hours, can whisper around the world by radio at 186,000 miles per second, has established contact with the moon--and most importantly of all--through pure scientific research, has tapped the fountainhead principles of energy permutations.***

Even as we conclude this report, we are fortunate in having the shelter tradition documented as having reached the historic phase of popularly visible economic absurdity. This absurdity is expressed in cogent dollar magnitudes in the following summary of an article on page 1, column 1, of the Chicago Tribune:

MAY 18, 1949. ON HIS INITIAL APPEARANCE ON CAPITOL HILL, SECRETARY OF DEFENSE JOHNSON, PRESENTED TO THE CONGRESS OF THE UNITED STATES A BILL WHICH FOR THE FIRST TIME IN UNITED STATES HISTORY COMBINES THE BUILDING PROJECTS OF THE (UNIFIED) ARMY, NAVY AND AIR CORPS IN A SINGLE PROGRAM CLEARED BY THE JOINT CHIEFS OF STAFF AND THE MUNITIONS BOARD AND PRESIDENT TRUMAN'S COMMITTEE ON RELIGION AND WELFARE IN THE ARMED FORCES.

ONLY IMMEDIATE AND URGENT PROJECTS WERE APPROVED, REPRESENTING "MINIMUM REQUIREMENTS--CRITICAL IN THE LIGHT OF OVERALL STRATEGIC CONSIDERATIONS." THIS PROGRAM HAS BEEN "ASSIGNED TOP PRIORITY." ASKING MONEY NECESSARY FOR MINIMUM STANDARD HOMES OF 1080 SQ. FT. FOR FAMILIES OF ENLISTED PERSONNEL AND G.I. VETS, THEIR ASTONISHING CRITICAL FIGURE IS \$17,745. FOR A DOMESTIC DWELLING AND \$27,300. FOR A DWELLING OUTSIDE THE STATES.

United Nations and U. S. State Department data indicates that one-third of the human family is doomed to premature death through causes originating in the world-wide inadequacy of the housing arts. Here is the most staggering problem in history, 800,000,000 people doomed who could be saved by responsible design initiative.

The following documentation of research on the Autonomous Dwelling Unit reports the latest phases of a maturing principle of housing solution. This undertaking, now 22 years under way and gaining acceleration, employs the principles of anticipatory design. Anticipatory design involves interpolation of latest scientific potentials into technical configurations and systematic interactions precluding failures, frustrations, lesions, discontinuities, deteriorations and runaway disorder in human living by providing omni-present facility for the unconscious or spontaneous interception of abnormal variables.

Throughout the last century, man has been able to acquire an increasing number of mechanical facilities. Each decade now brings wonders to the average man unavailable to the wealthiest a decade earlier. What is the relative optimum standard of living as stated in mechanical facility as of the Spring of 1949?

"EMERGENCY SITUATION IS THE LEVER THAT OVERCOMES MAN'S INERTIA. THE CITY IS TO BE EVACUATED. ALL RESIDENTIAL AND INDUSTRIAL CONCENTRATIONS OF 50,000 PERSONS OR MORE ARE IN IMMEDIATE DANGER OF ANNIHILATION. CONSUMABLE GOODS NOW DIRECTED TOWARD THESE AREAS WILL BE DIVERTED TO SMALLER, DECENTRALIZED COMMUNITIES. YOU HAVE SEVEN DAYS IN WHICH TO GATHER ALL LIVING MECHANICS NECESSARY TO MAINTAIN A HIGH STANDARD OF LIVING FOR A FAMILY OF SIX, TWO ADULTS, TWO CHILDREN AND TWO GUESTS. EVERYTHING NOT DECENTRALIZED FROM BIG CITIES WILL BE DESTROYED; THEREFORE, THERE WILL BE NO PURCHASE RESTRICTIONS OR LIMITATIONS. YOU WILL BE GIVEN PRIME-MOVER AND TRANSPORT TO A DECENTRALIZED AREA OF LOW CONCENTRATION. THERE A SHELTER WILL BE PROVIDED THAT OFFERS COMPLETE CONTROL OVER EXTERNAL DESTRUCTIVE FORCES. ONCE ON THE SPOT, THE PRIME-MOVER WILL BE EQUIPPED TO PROVIDE ALL OF THE POWER NECESSARY TO OPERATE THE MECHANICS OF YOUR SELECTION. PERSONAL TRANSPORT--EITHER AIR OR GROUND--WILL BE PROVIDED IN ORDER THAT CONSUMABLE GOODS, REPAIR AND REPLACEMENT PARTS FOR THE MECHANICS CAN BE OBTAINED WITH REASONABLE EASE. WHAT ARE YOU GOING TO DO? WHAT SIZE VAN DO YOU WANT? WHAT SIZE CHECK DO YOU NEED TO COVER YOUR PURCHASES? HOW HEAVY IS THE LOAD? ETC.?"

A few months ago Buckminster Fuller, seeking an answer to the question, "What is high standard of living specifically stated in items of mechanical facility as of Spring 1949," assigned the above problem to forty students of the seventh semester Architecture-Product Design classes at the Institute of Design, Chicago. The assignment stipulated that advanced scientific and industrial methods complement intuitive initiations and assumptions and that the whole be systematically reported.

We, the group, now report.

To gain the widest possible coverage of individual items, each student started to wade through the galaxy of stores in the greater Chicago area shopping for pertinent mechanics. Individual lists were then to be superimposed to minimize personal error. The greater the number of individual lists, the smaller the end error. The data thus obtained was to be recorded on file cards as follows:

Name of item
Rating (performance characteristics, especially those unique degrees of
characteristic performance which determined the preferential selection)
Manufacturer's identification (model and year)
Manufacturer's name
Retail outlet name
Gross weight per item (with package)
Net weight per item (without package)
Gross over-all dimensions (with package)
Net over-all dimensions (without package)
Cost per family package
Weight per family package
Volume per family package

It quickly became apparent that the scope and magnitude of the problem as assigned made it impossible to complete on an individual basis in the time allotted. At this point, teams were organized in systematic coverage of the above as checked against the "Universal Requirements" check list, evolved by Mr. Fuller in 1927 as the scientific control for development of the Dymaxion house. He published "Universal Requirements" in Shelter magazine in December, 1931, and again somewhat revised in "Nine Chains to the Moon" (J. B. Lippincott, Philadelphia) in 1938, and once again revised in "Designing a New Industry" published by Fuller Research Foundation in 1946. It is present again here after further interim revision.