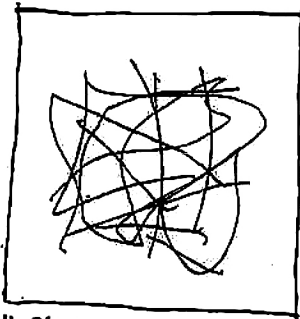
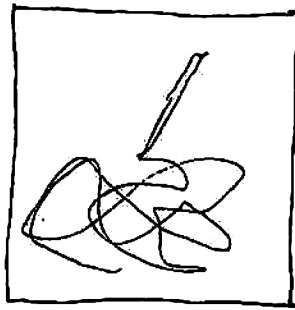


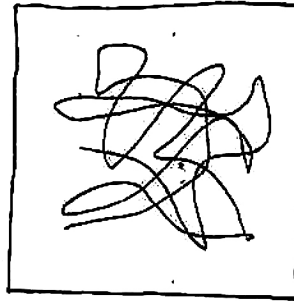
"GRIBOUILLE" 1



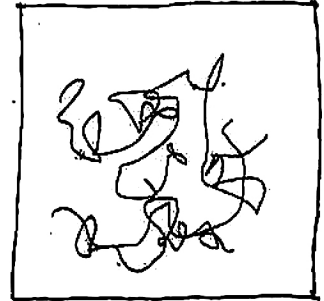
"GRIBOUILLE" MEANS IN FRENCH A "CRISSCROSSING" LINE



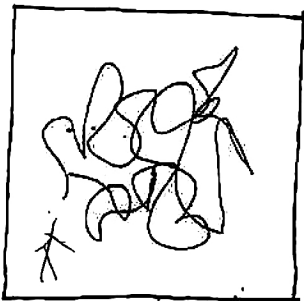
WHICH YOU DRAW ON A SHEET



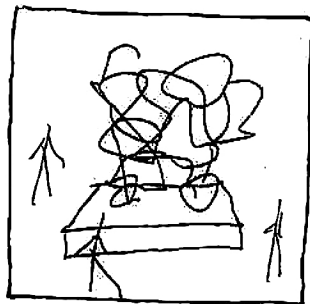
BUT YOU CAN DO A "GRIBOUILLE" IN 3 DIMENSIONS



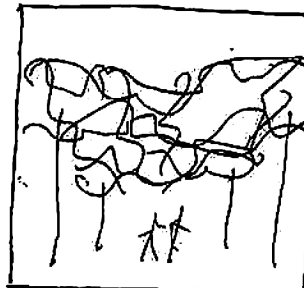
FOR EXAMPLE WITH WIRE



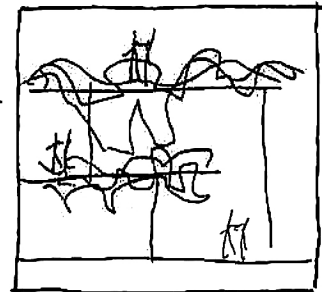
A 3-DIMENSIONAL GRIBOUILLE



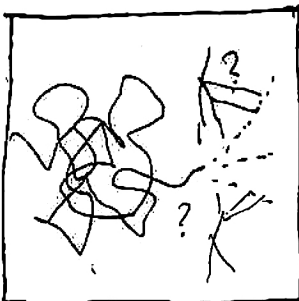
IS, IN THE SAME TIME, A SCULPTURE



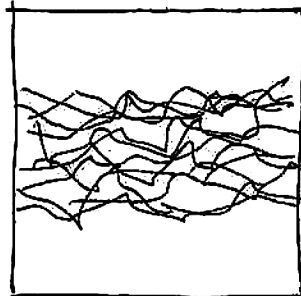
OR AN IRREGULAR SPACE-FRAME STRUCTURE



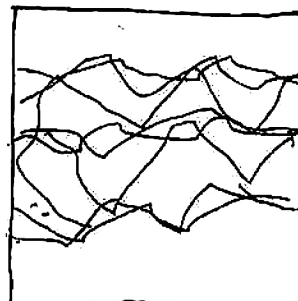
IMPLEMENTABLE IN ARCHITECTURE OR IN ENGINEERING



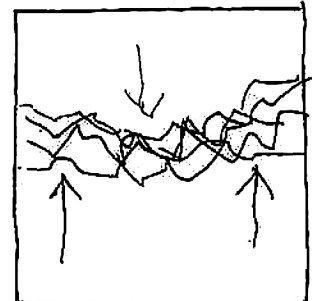
THERE ARE NO RULES HOW TO DO A 3-DIMENSIONAL GRIBOUILLE



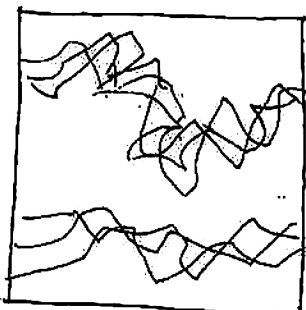
YOU CAN LOOK AT IT AS A MATERIAL MADE WITH FIBRE



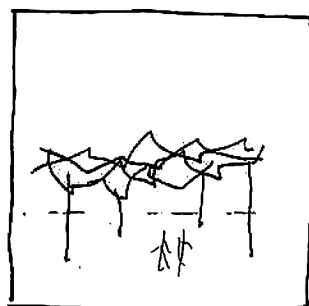
AND THE CONFIGURATIONS OF WHICH



IMPLY ITS SOLIDITY



YOU CAN MAKE ANY SHAPE WITH THIS MATERIAL



ROOFS

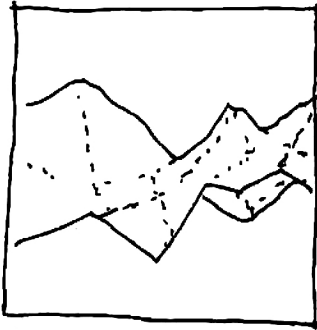


TOWERS

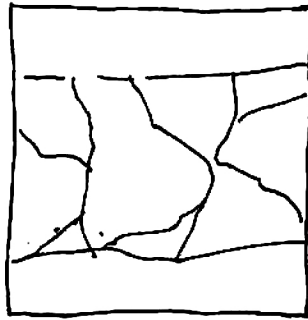


AND EVEN FIGURES

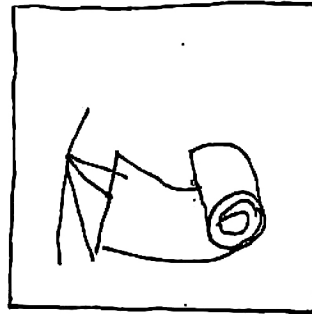
CRUMPLED SHEETS



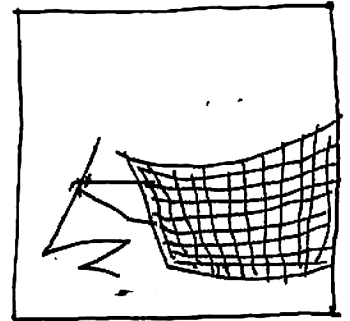
CRUMPLED SHEETS ARE A PLYWORK STRUCTURE



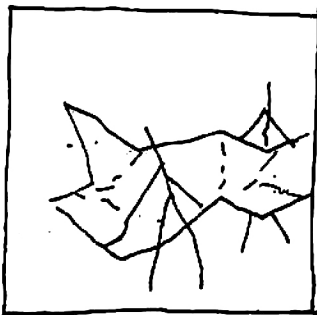
WITH NO REGULAR PATTERN



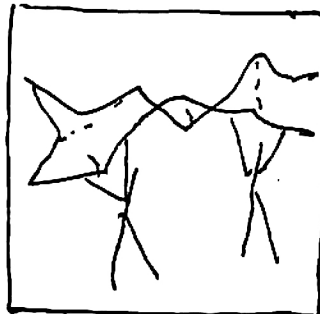
YOU TAKE SIMPLY A FOIL, OF A MATERIAL THAT KEEPS FORM



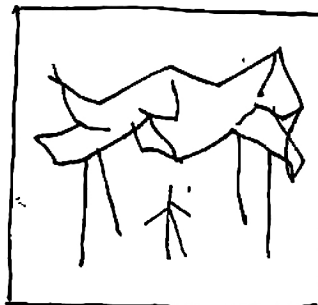
FOR EXAMPLE LIGHT METAL GRID



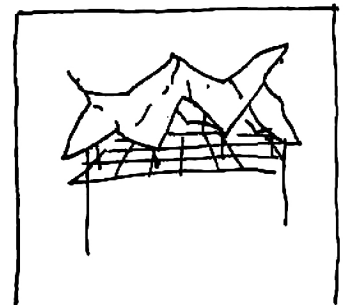
YOU BEND THIS FOIL AND CRUMPLE IT AT YOUR PLEASURE



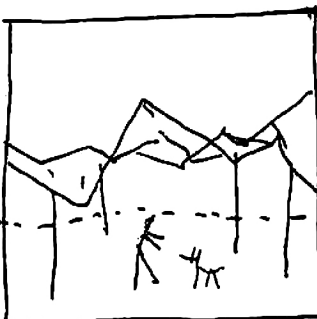
THE CRUMPLED SHEET RESULTING IS A STRUCTURE



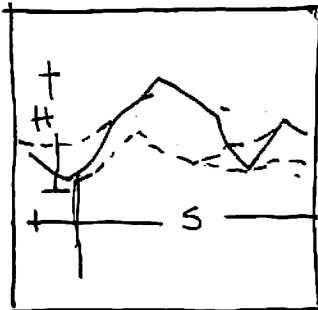
YOU CAN USE AS A SHADE ROOF



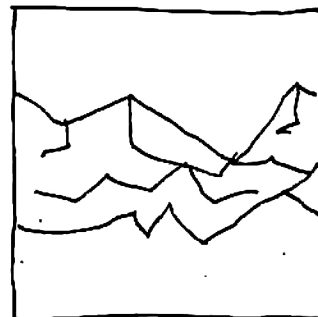
OR AS THE SUPPORT FOR THE "ROOF SKIN" FOR EXAMPLE, HANGING ON IT



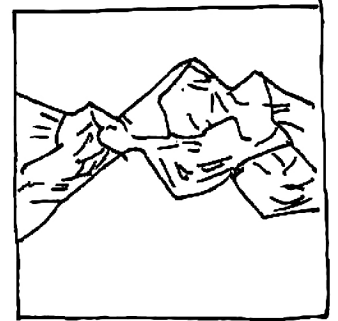
THE SOLIDITY OF THE CRUMPLED SHEET COMES OF ITS WAVE AMPLITUDE:



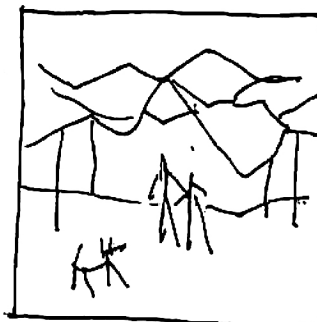
THE PATTERN SHOULD BE HIGH, FOR EXAMPLE $H \approx 1/3 S$



AND THE WAVES SHOULD NOT BE PARALLEL



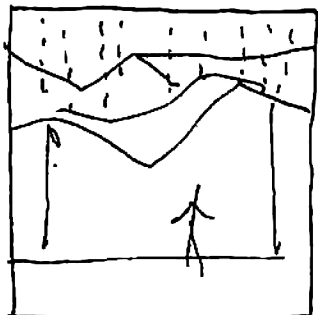
THE SMALL BENDS DISTRIBUTE THE STRESSES



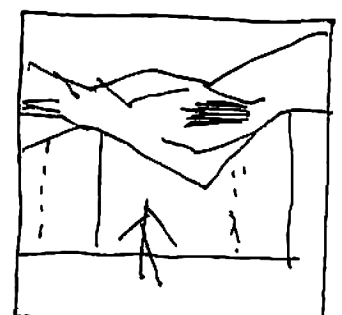
A CRUMPLED SHEET ROOF CAN BE BEAUTIFUL



AND STRONG. IT CAN BE EASILY REMODELED WHEN NEEDED

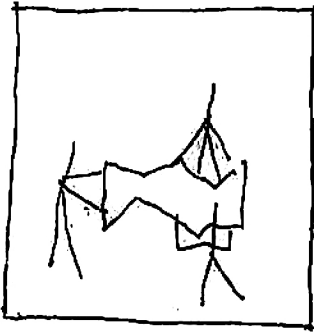


BUT IT CAN NOT SERVE AS ROOF SKIN ITSELF

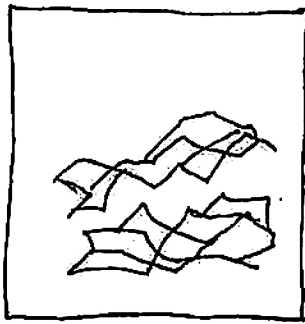


AS IN SPOTS THE RAINWATER WOULD ACCUMULATE

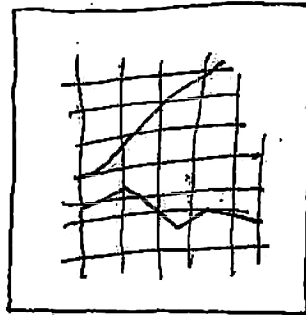
IRREGULAR STRUCTURES



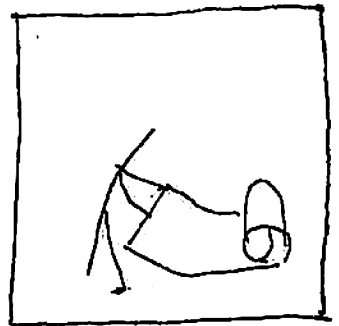
IRREGULAR STRUCTURES CAN BE BUILT EASILY



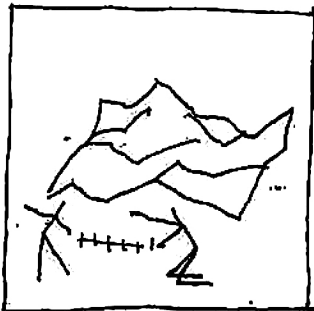
BUT IT IS DIFFICULT TO DRAW THEM ON PAPER



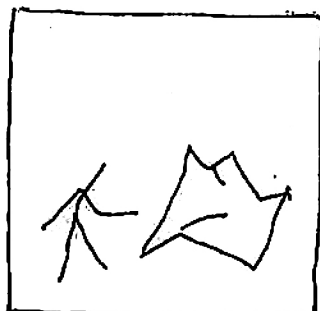
THEY DON'T FOLLOW RULES & THEREFORE EASY TO FORMULATE



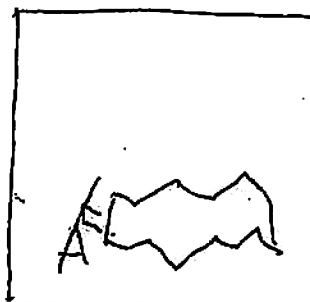
BUT THERE ARE METHODS TO BE APPLIED WHEN BUILDING



IT IS IMPORTANT THAT SUCH STRUCTURES DON'T ASK FOR PRECISION



THEY ADMIT CERTAIN NEGLIGENCE IN IMPLEMENTATION, WHAT THE PROFESSIONAL WOULD NOT TOLERATE



THUS LAYMEN ARE CAPABLE TO IMPLEMENT THEM



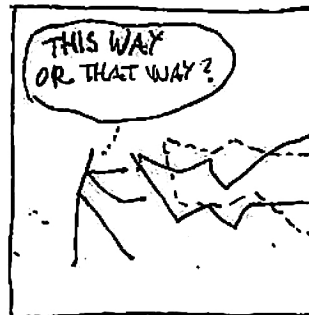
THESE STRUCTURES CAN NOT BE SHOWN COMPLETELY EVEN IN MODELS



YOU CAN TEST THEM ONLY IN FULL SCALE



ON THE SITE



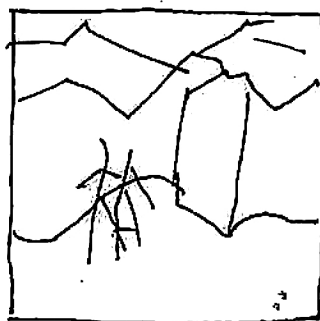
IRREGULAR STRUCTURES ARE OPEN TO IMPROVISATION



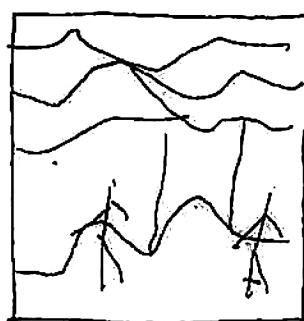
TO CONTINUOUS CHANGE



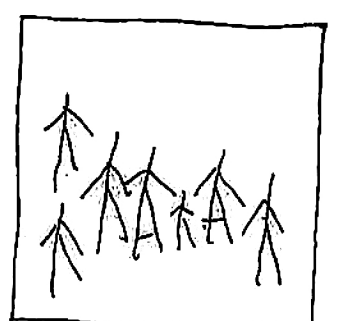
THEY HAVE NO FINAL STATE



THEY ARE ONGOING PROCESSES

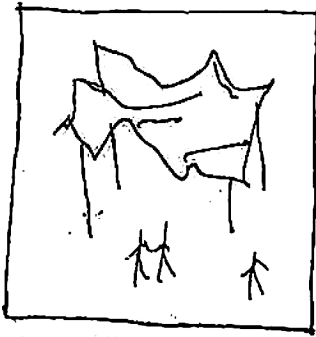


AND OPEN UP A "SOFT" ARCHITECTURE

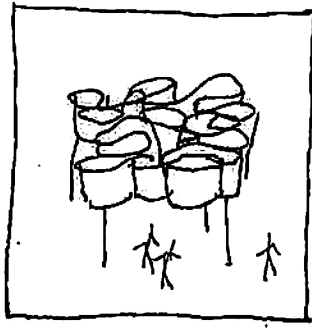


WHICH FITS BEST A "SOFT" SOCIETY

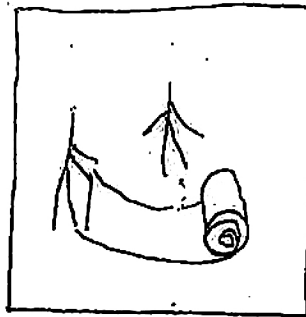
MATERIALS



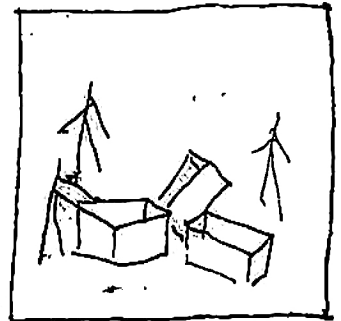
AS IRREGULAR STRUCTURES HAVE TO BE TESTED AT FULL SCALE



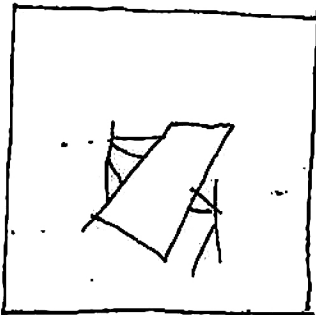
FULL SCALE MODELS CAN BE MADE WITH CARD BOARD



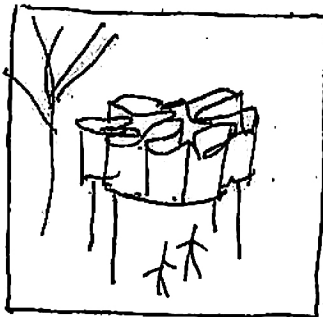
WITH ROLS



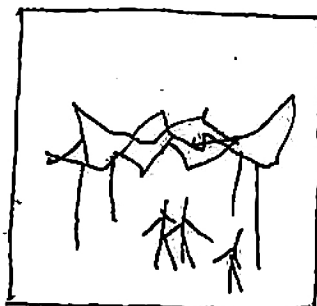
WITH BOXES



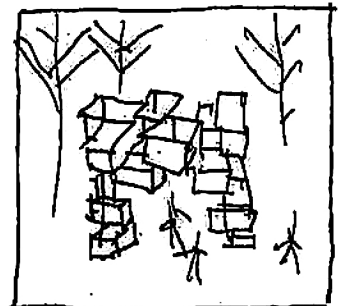
WITH PLATES



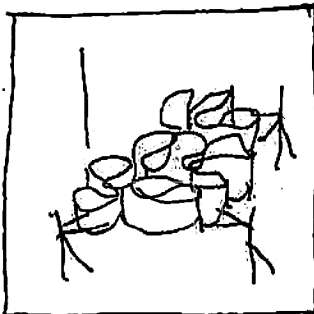
SUCH FULL SCALE DUMMIES INDICATE PHYSICAL QUALITIES OF SHAPES



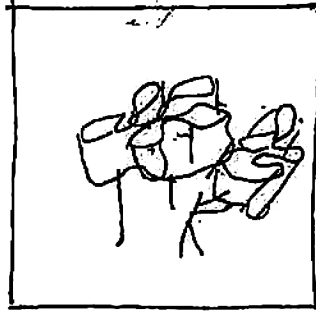
ESTHETIC QUALITIES OF THE ARCHITECTURAL OBJECT TO BE BUILT



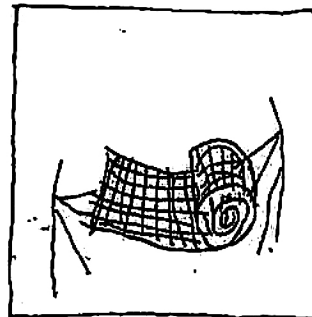
AND CAN EVEN BE USED AS EPHEMEROUS CONSTRUCTIONS



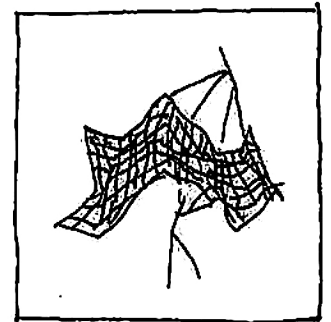
FULL SCALE CARDBOARD MODELS



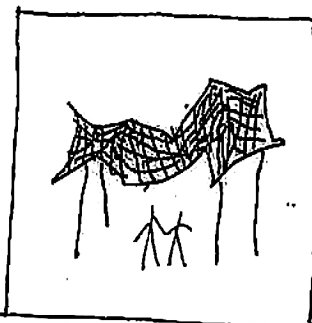
ALL THE MEANS FOR "TRIAL AND ERROR"



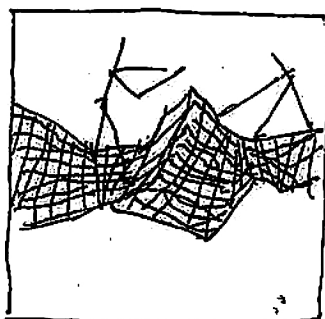
ANOTHER MATERIAL CAN BE USED: LIGHT METAL GRIDS



WHICH CAN BE FORMED BY BARE HANDS



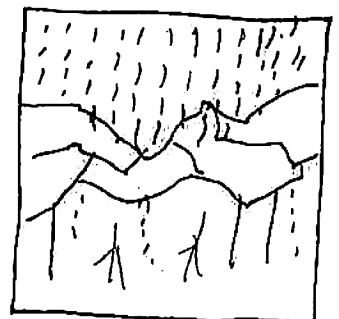
CONSTRUCTIONS MADE WITH METAL GRIDS



ARE LESS EPHEMEROUS: THEY KEEP LONGER

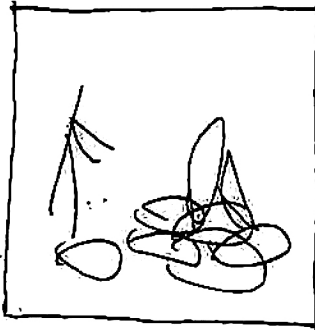


METAL GRID FOILS CAN BE COMBINED WITH SOFT PLASTICS

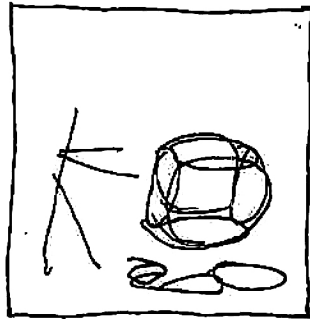


AND ARE ABLE TO BE USED AS OPEN SHELTERS

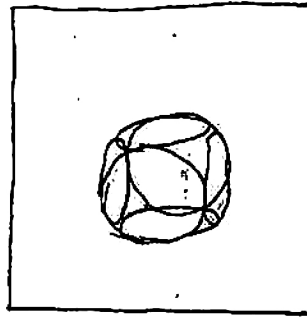
PROTEINIC CHAINS



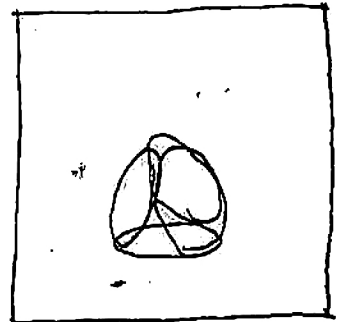
YOU CAN BUILD IRREGULAR STRUCTURES SIMPLY WITH RINGS



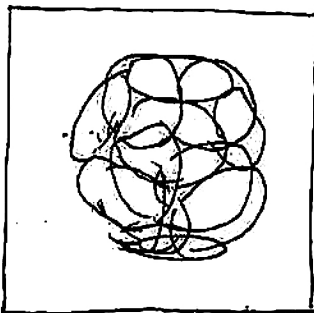
YOU HAVE TO START WITH REGULAR POLYHEDRA.



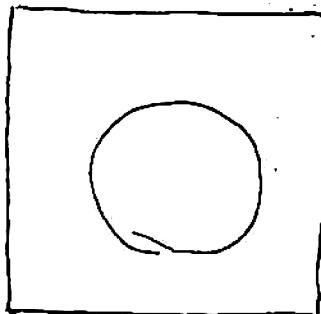
FOR EXAMPLE: A CUBE WHEREIN THE RINGS SUBSTITUTE THE SQUARES



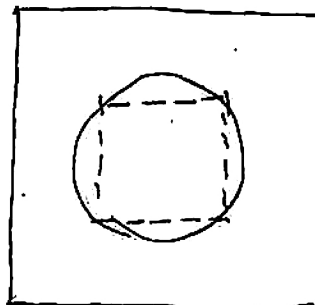
OR A TETRAHEDRON THE TRIANGLES OF WHICH ARE REPRESENTED BY CERCLES



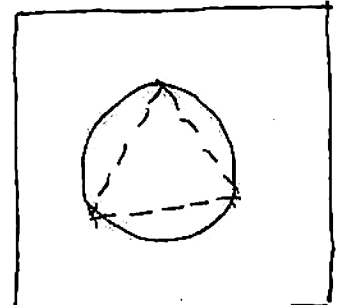
OR A DODECAHEDRON WITH CERCLES FOR ITS PENTAGONS ETC I CALL THIS TECHNIQUE "SPACE-CHAINS"



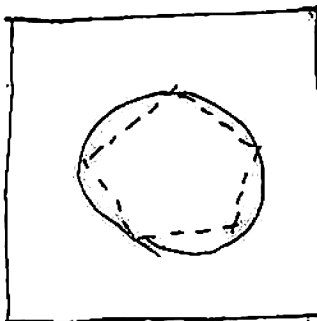
BUT A CERCLE IS AN UNDEFINED FIGURE.



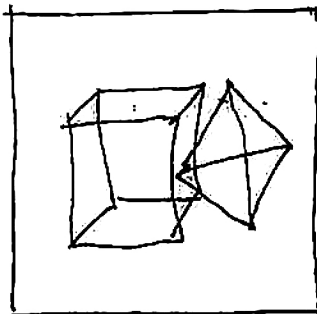
IT CAN STAND FOR A SQUARE



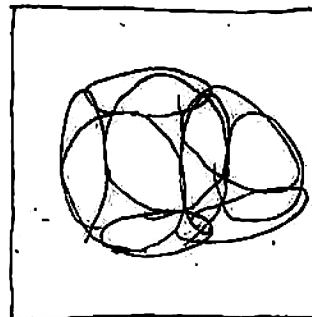
FOR A TRIANGLE



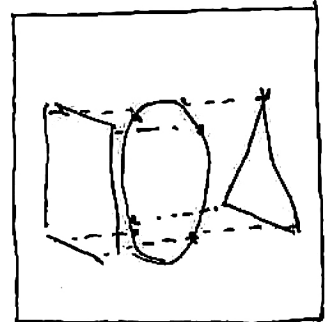
OR FOR A PENTAGONE



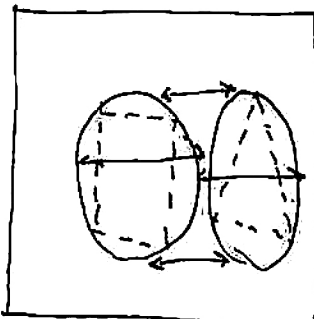
YOU CAN NOT LINK A CUBE TO A TETRAHEDRON (A SQUARE IS NOT A TRIANGLE)



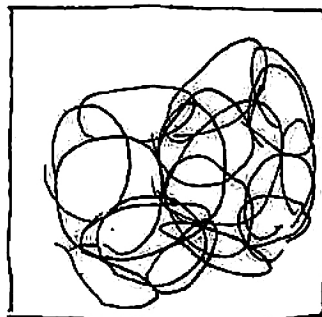
BUT, WITH THE SPACE-CHAIN TECHNIQUE YOU CAN DO IT



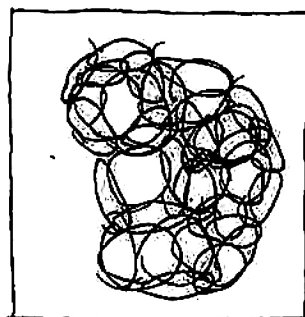
A RING IS A RING. IT CAN BE A SQUARE FROM ONE SIDE AND A TRIANGLE FROM THE OTHER



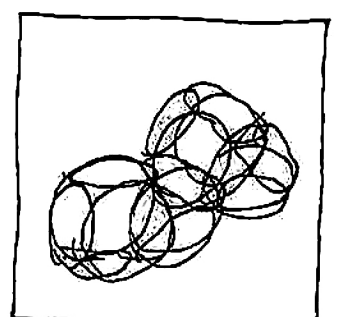
YOU CAN LINK ANY CERCLE-FACED POLYHEDRON TO ANY OTHER



THERE IS NO MORE GEOMETRIC RULE FOR SPACE-CHAINS

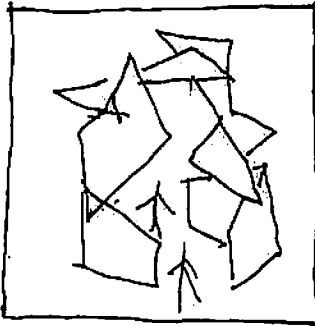


AND WILD COMBINATIONS BECOME POSSIBLE

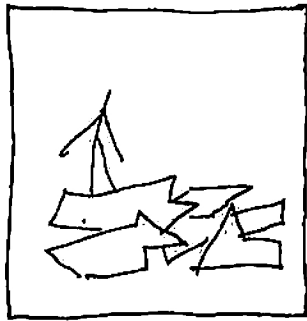


I CALL THESE WILD STRUCTURES "PROTEINIC" ONES

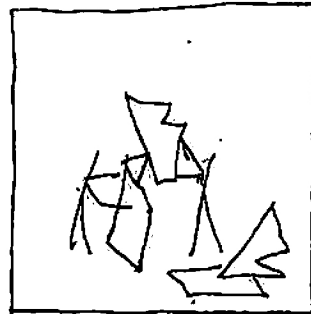
MERZ STRUKTUREN



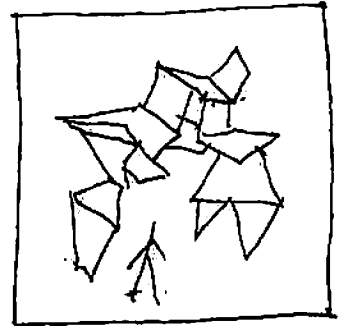
THERE ARE STRUCTURES I CALL "MERZ-STRUKTUREN" AS A HOMMAGE TO THE "MERZBAU" OF KURT SCHWITTERS



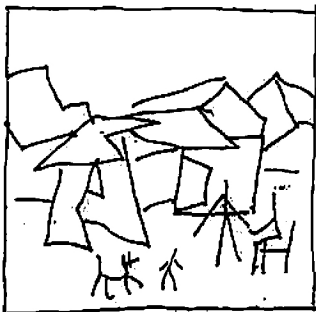
THEY ARE CONSTRUCTED FROM ODD PIECES OF ANY MATERIAL: WOOD, METAL, GLASS, CARDBOARD OR PLASTICS



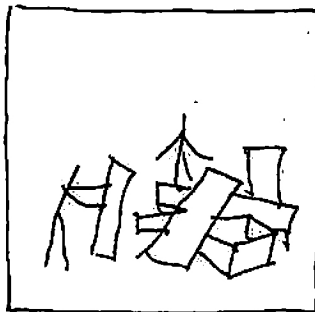
WHICH ARE ASSEMBLED IN WHATEVER WAY THEY CAN FIT



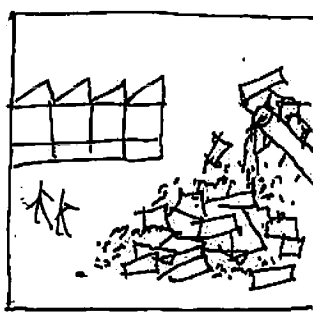
PROVIDED THAT THE STRUCTURE KEEPS UP STANDING



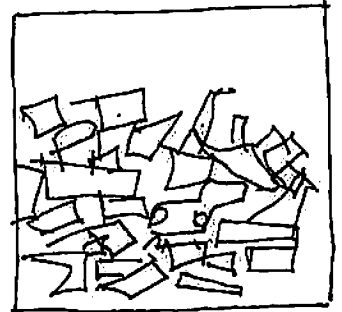
OBVIOUSLY, SUCH STRUCTURES CHARACTERIZE, FIRST OF ALL, THE SHANTYTOWNS



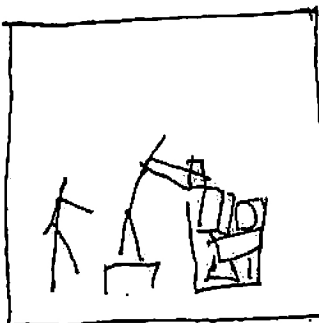
WHERE PEOPLE HAVE TO USE, FOR THEIR HOMES, WHATEVER THEY FIND



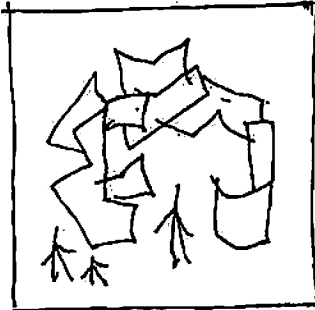
IN OUR INDUSTRIAL CIVILISATION THE PRODUCT PRODUCED IN THE LARGEST QUANTITY, IS REFUSE, IS INDUSTRIAL FALLOUT



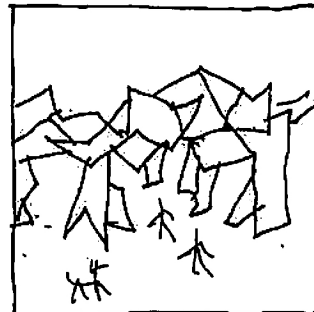
IT IS THE RICHEST RAW MATERIAL OF OUR EPOCH.



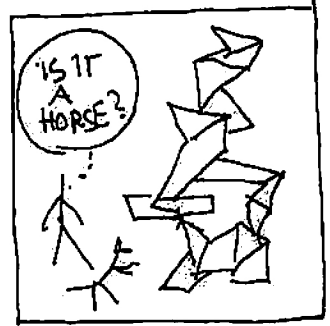
WHATEVER YOU WANT TO BUILD YOU CAN FIND MATERIAL FOR IN THE DUSTBINS



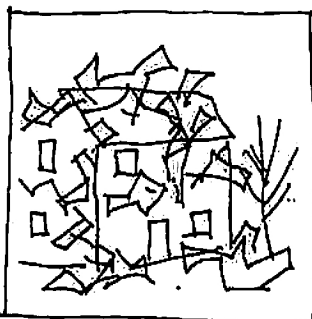
IT IS THE MOST PHANTASTIC SHAPES YOU CAN BUILD WITH



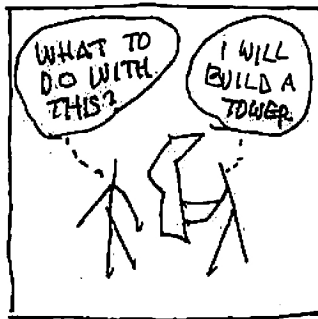
SHELTERS



MONUMENTS



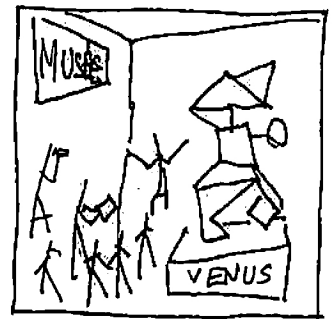
OR SIMPLY EMBELLISHMENTS



YOU CANNOT PLAN, ONLY IMPROVISE

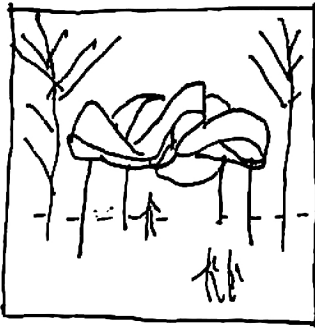


RANDOM COLLECTIONS OF THINGS ASSEMBLED FOR A SPECIFIC GOAL

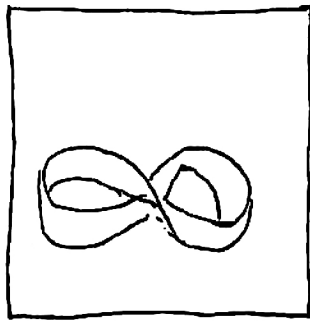


IS A WAY TO DEFINE "MODERN" (OR WHATEVER) ART

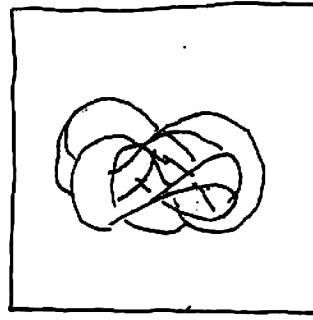
MOEBIAN STRUCTURES



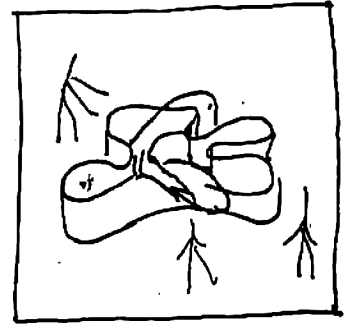
A PARTICULAR KIND OF LAMELLAR STRUCTURES MADE WITH RIBBONS



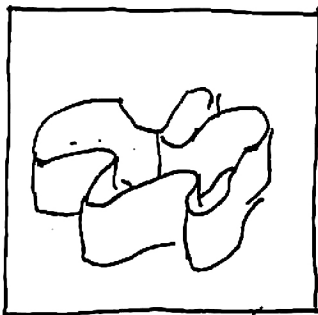
ARE BASED ON THE "MOEBIUS" BAND:



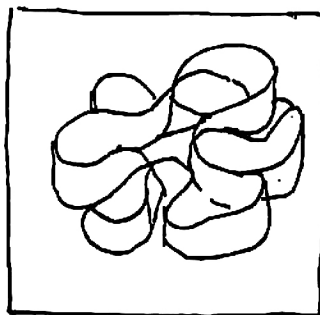
"MOEBIAN STRUCTURES"



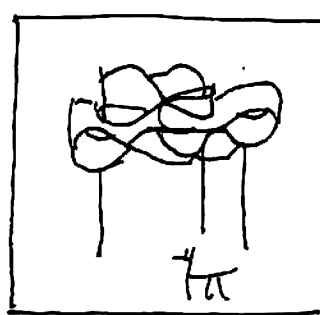
THESE STRUCTURES START WITH BAND CONFIGURATIONS, LIKE OTHER LAMELLARS



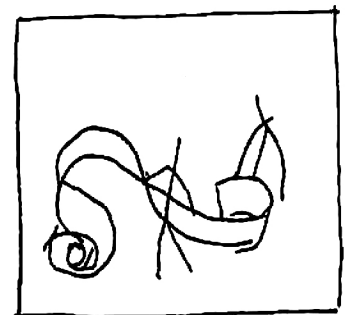
BUT HERE, BESIDE MAKING SIMPLE LOOPS



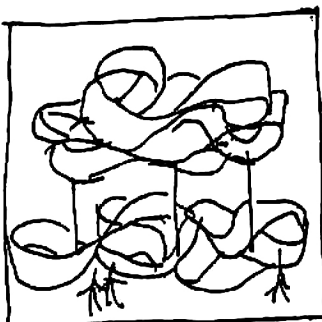
YOU HAVE TO TWIST THE RIBBON PERIODICALLY



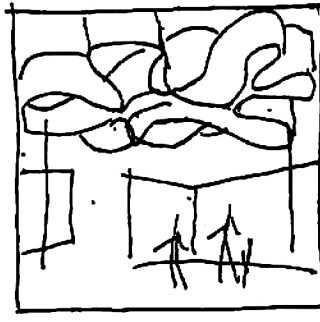
MOEBIAN STRUCTURES ARE NOT MORE SOLID THAN OTHER LAMELLARS



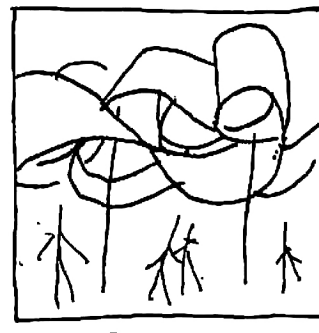
NEITHER MORE EASY TO BUILD



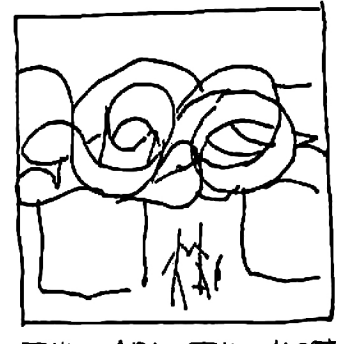
BUT THEIR ESTHETIC VOCABULARY IS FAR MORE RICH



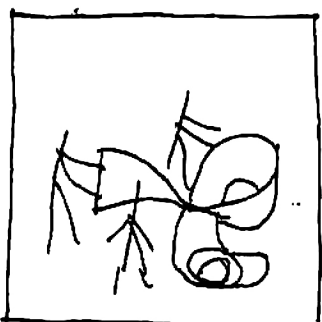
THEY SCATTER LIGHT INSIDE



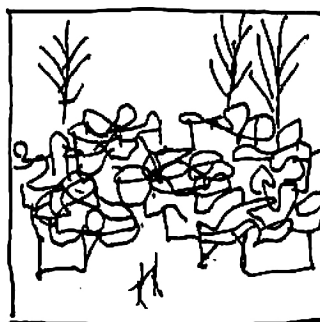
AND PRODUCE SPACES UNHEARD OF



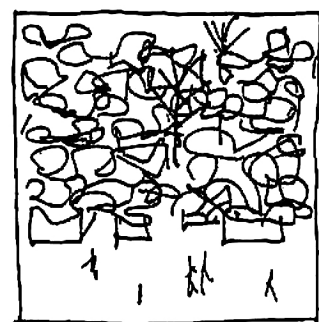
THEY ARE THE MOST BAROQUE STRUCTURES EVER MADE IN ARCHITECTURE



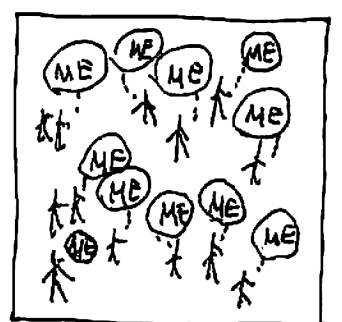
IT IS THEREFORE THAT THEY SERVE INDIVIDUALISM



BUT A VERY LARGE NUMBER OF THEM REDUCES THIS EFFECT

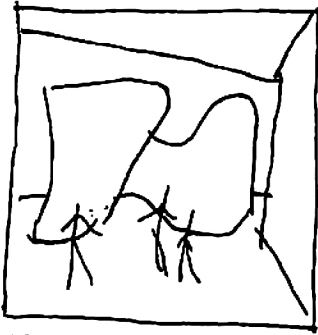


THEY PRODUCE (LIKE ALL BAROQUE) MONOTONY

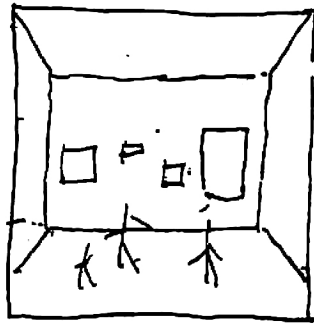


"MASS-INDIVIDUALISM" IS A BAROQUE PHENOMENON

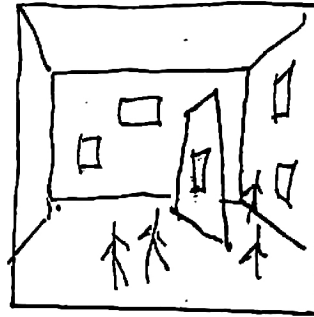
IKONOSTASES



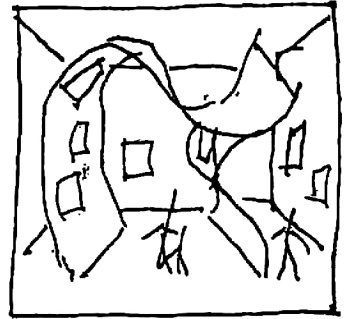
IRREGULAR STRUCTURES CAN COMPLETELY TRANSFORM SPACES WITHIN EXISTING BUILDINGS



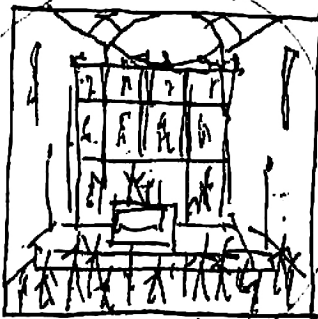
FOR EXAMPLE AN EXHIBITION ROOM



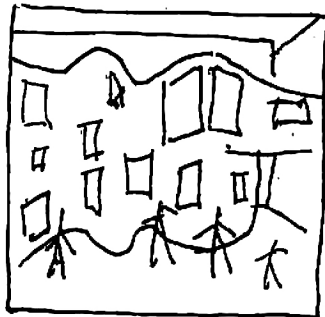
WHERE EXHIBITS ARE PRESENTED ON THE WALLS OR ON VERTICAL PANES



WOULD CHANGE COMPLETELY IF THE PRESENTATION SCREENS WOULD BE RESHAPED



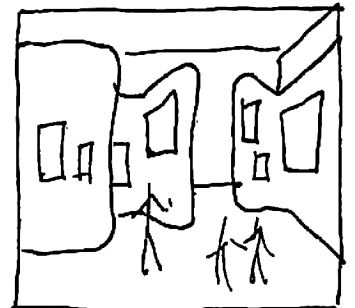
I CALL SUCH SCREENS "IKONOSTASES" AS THEY ARE CALLED IN ORTHODOX CHURCHES



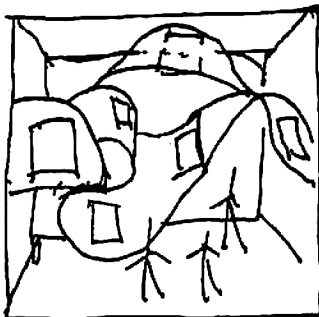
WE CAN PRODUCE EASILY IKONOSTASES OF ANY SHAPE:



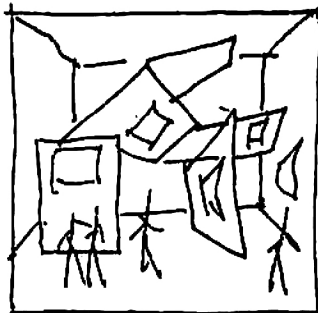
CRUMPLED ONES,



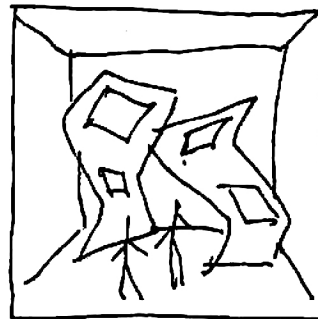
LAMELLARE ONES,



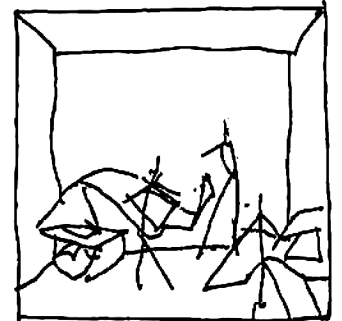
MOEBIANS



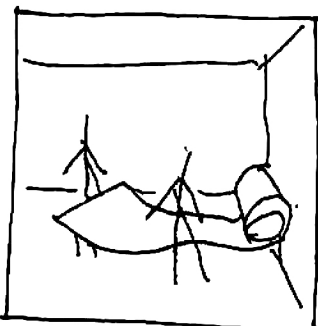
OR MERZIANS.



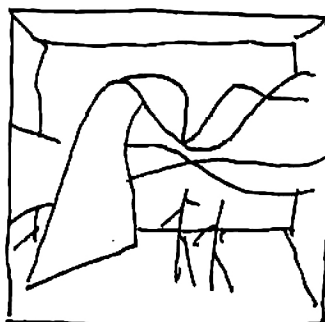
MAINLY VERTICALS



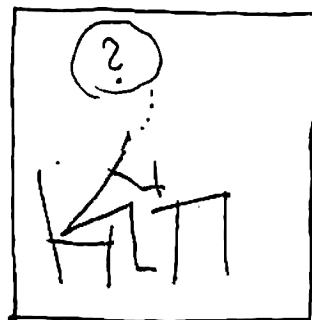
OR MAINLY HORIZONTAL.



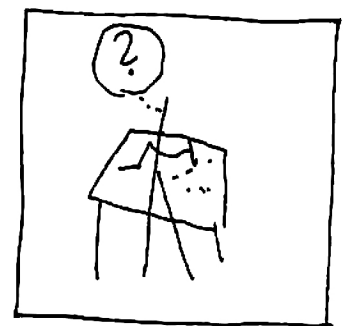
THE TECHNIQUES ARE THE SAME AS FOR ALL IRREGULAR STRUCTURES



BUT THE EMOTIONAL EFFECT OF SUCH SPACES

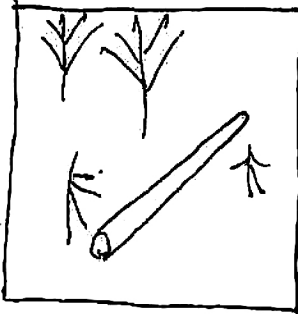


IS DIFFICULT TO DESCRIBE

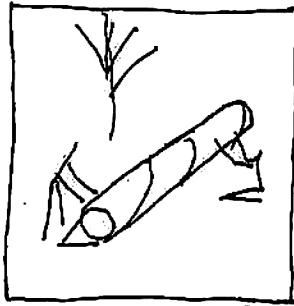


OR TO DRAW

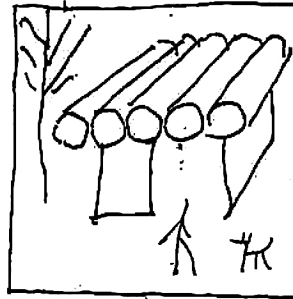
TUBULAR STRUCTURES



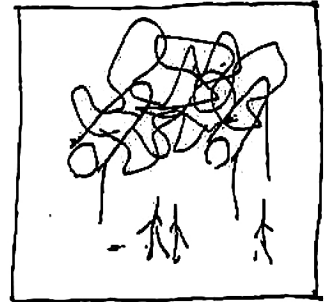
WITH CARDBOARD YOU CAN MAKE TUBES OF ANY DESIRED LENGTH



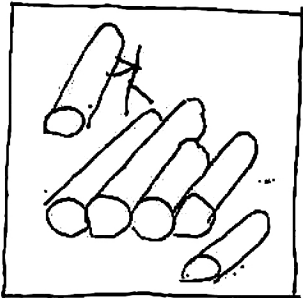
BY ROLLING THE SHEET DIAGONALLY



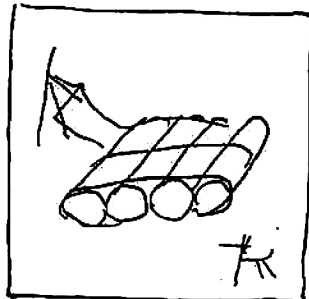
SUCH TUBES, ASSEMBLED, CAN FORM A ROOF SLAB



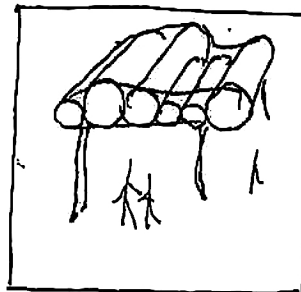
THEY CAN SERVE ALSO AS A GIRDER FOR LIGHTWEIGHT ROOFS



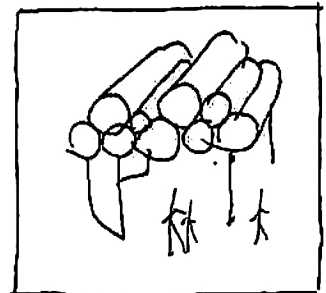
TUBULAR ROOF SLABS ARE EASY TO ASSEMBLE



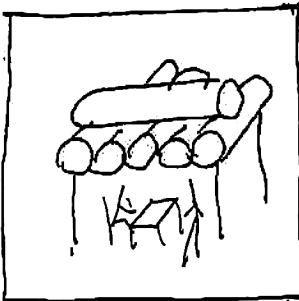
WRAPPING THE SLAB WITH TRANSPARENT PLASTIC FOILS TO MAKE THE SLAB WATERTIGHT



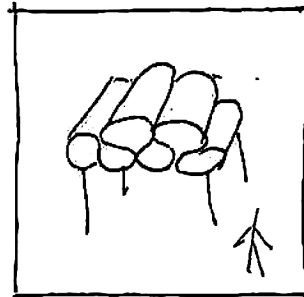
IT IS NOT NECESSARY THAT ALL THE TUBES BE OF THE SAME DIAMETER OR OF THE SAME LENGTH



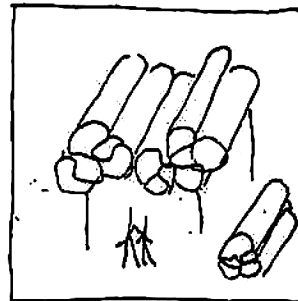
THE TUBES CAN BE DISPOSED ALSO IN SEVERAL LAYERS



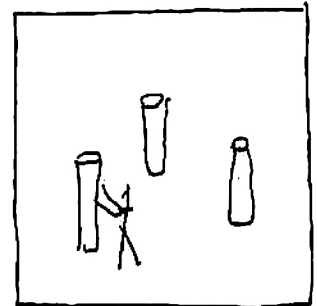
THE SLAB CAN BE BRACED WITH A TUBULAR TIER



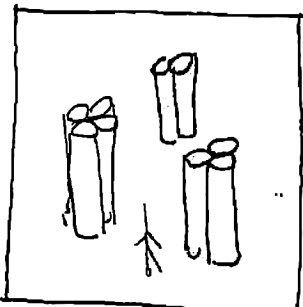
TUBULAR ROOFS ARE A SORT OF LAMELLAR STRUCTURES



THUS THE TUBES ARE NOT NECESSARILY CIRCULAR BUT OF A LAMELLAR SECTION



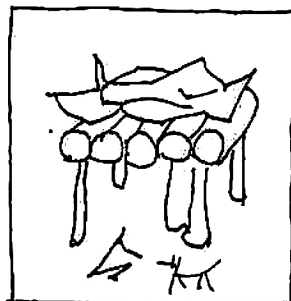
THEY CAN SERVE OBVIOUSLY ALSO AS PILLARS



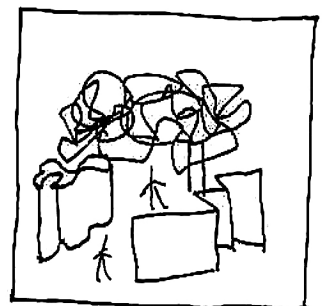
A BUNDLE OF TUBES



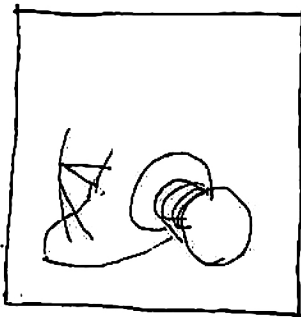
OR A LAMELLAR TUBE AND SMALL PILLARS



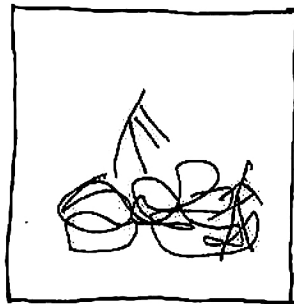
TUBULAR STRUCTURES COMBINE WELL WITH OTHER KINDS



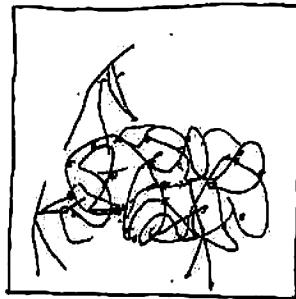
COMPLETING THE "FAMILY"



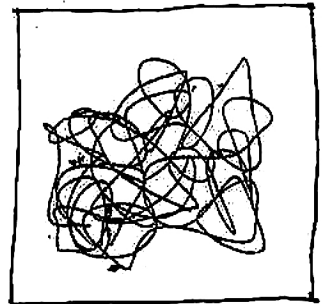
YOU SHOULD TAKE
A ROLL
OF THICK WIRE



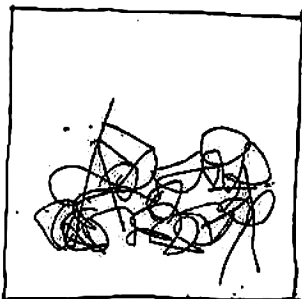
AND ENTANGLE IT



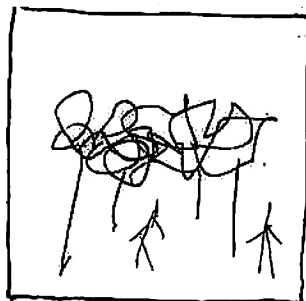
FASTEN
THE CROSSINGS
OF THE TANGLED
WIRE



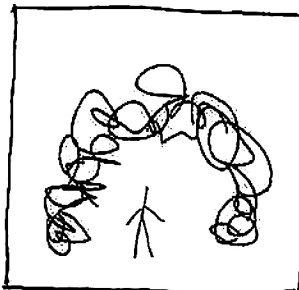
MAKE IT
AS CAPRICIOUS
AS YOU CAN



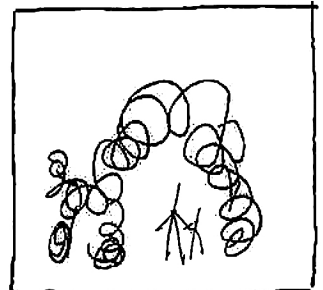
THE TANGLED WIRE
FORMS THUS
A SORT OF A SLAB



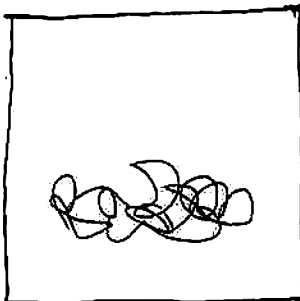
WHAT YOU CAN USE
AS A FLAT
ROOF SUPPORTING
STRUCTURE



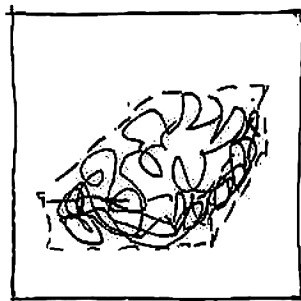
YOU CAN AS WELL
BEND
THE TANGLED WIRE
SLAB
AND HAVE A VAULT



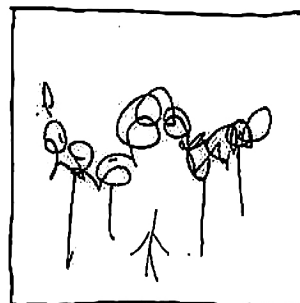
OR ANY OTHER
SHELL STRUCTURE



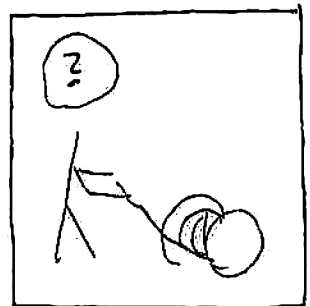
THE TANGLED WIRE
STRUCTURE



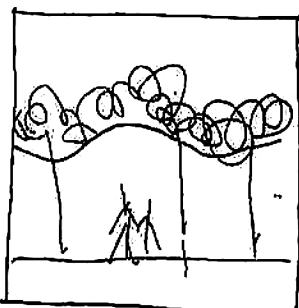
BEHAVES LIKE
A THICK SHEET
OF "MACRO-MATERIAL"



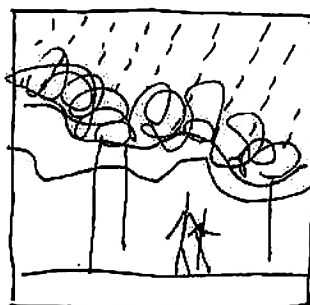
YOU CAN MAKE
EVEN CRUMPLED
STRUCTURES
OUT OF IT



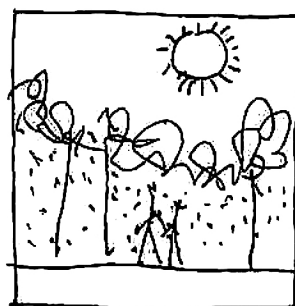
IT IS THE MOST
IMPROVISED
STRUCTURE
WE CAN IMAGINE



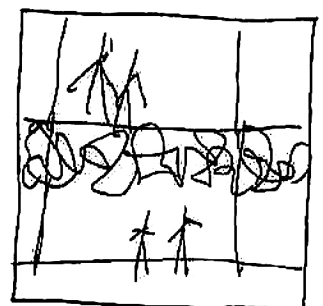
SUPPORTING
SOFT PLASTIC FOIL



IT CAN SERVE
AS A ROOF,

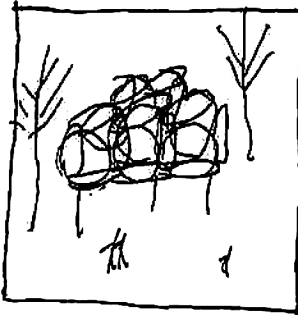


A SUN-SHADE,

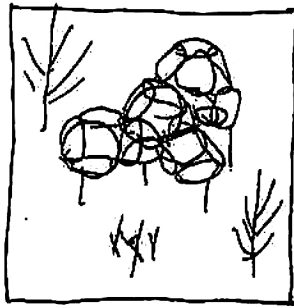


OR EVEN
AS A FLOOR

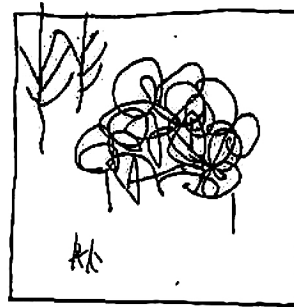
"PACKING"



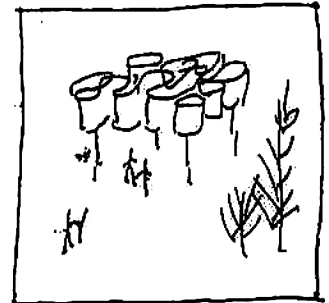
MOST IRREGULAR STRUCTURES ARE OF THE SKELETON TYPE:
SPACE-CHAINS



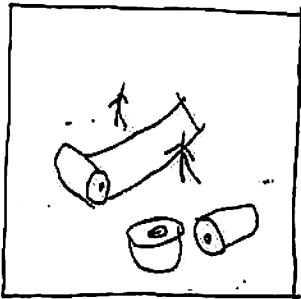
PROTEINIC CHAINS



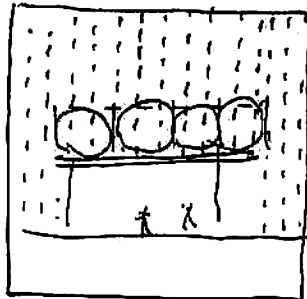
GRIBOULLI



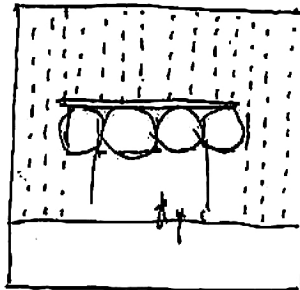
AND EVEN IN A CERTAIN WAY LAMELLAR STRUCTURES



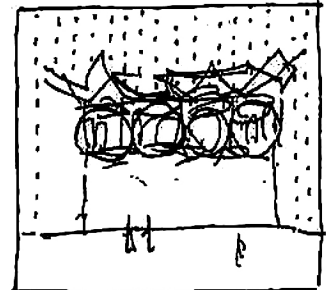
THEY ALL NEED A "ROOF-SKIN" FOR BEING USED PRACTICALLY



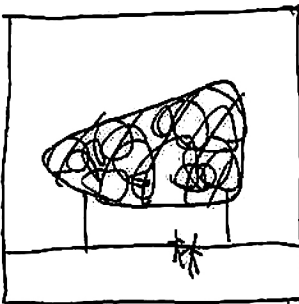
THE "ROOF-SKIN" CAN BE SUSPENDED



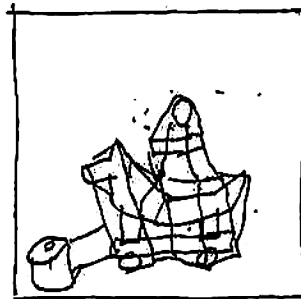
OR THE SKELETON CAN BEAR IT AT THE TOP



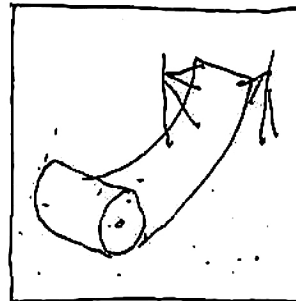
IN FORM OF CRUMPLED SHEET OR OTHER



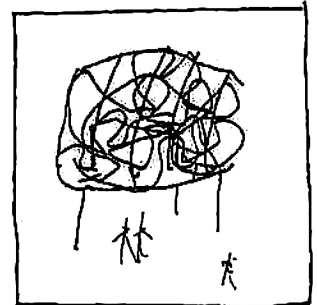
ANOTHER WAY TO TRANSFORM A SKELETON INTO ROOF IS "PACKING"



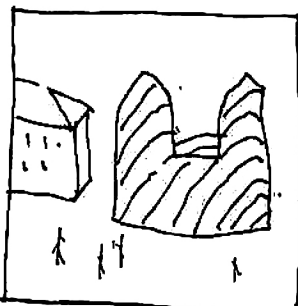
"PACKING" MEANS ENVELOPING AN OBJECT WITH A FOIL



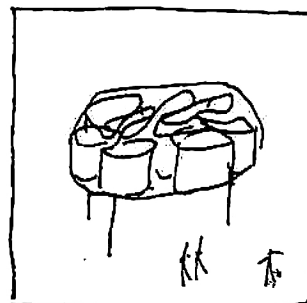
THE BEST WAY TO "PACK" A SKELETON IS TO USE TRANSPARENT SOFT PLASTIC FOIL



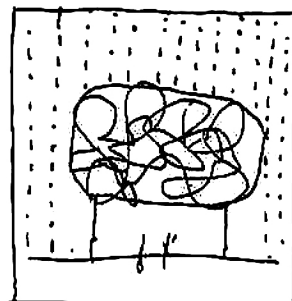
WRAPPED AROUND THE SKELETON



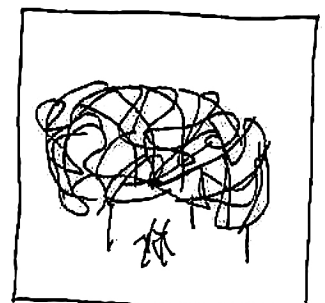
A WELL KNOWN ARTIST, CRISTO, "PACKED" EXISTING MONUMENT AS A SORT OF ART



WE ARE "PACKING" SKELETON STRUCTURES TO MAKE THEM - TIGHTER

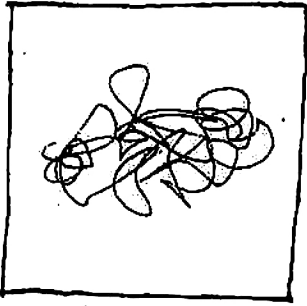


WATERTIGHT

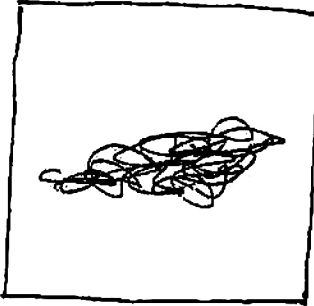


AND FOR MAKING THEM MORE BEAUTIFUL

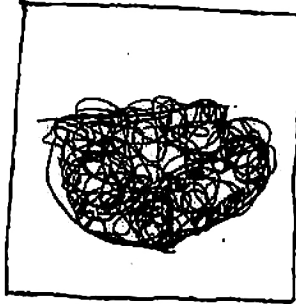
METAL - FELT



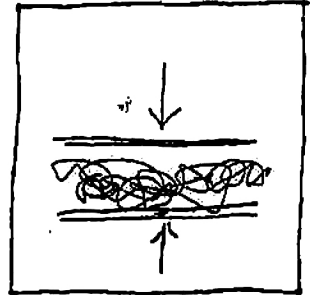
A PARTICULAR KIND OF THE "GRIBOUILLI"



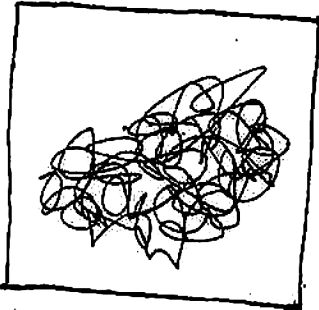
IS WHAT I CALL A "METAL-FELT"



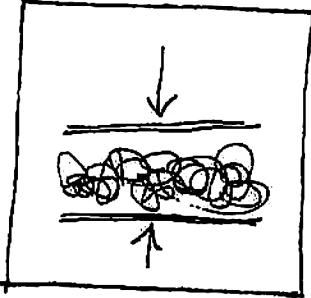
"FELT" IS THE NAME OF A TISSUE



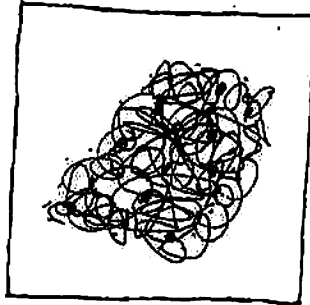
WHAT YOU CAN OBTAIN BY PRESSING ENTANGLED WOOL INTO A SHEET



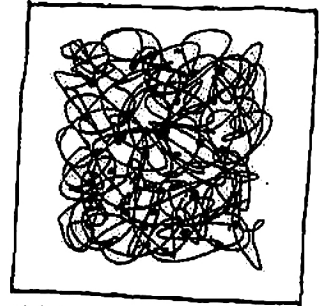
AS THE "GRIBOUILLI" IS NOTHING ELSE THAN ENTANGLED WIRE



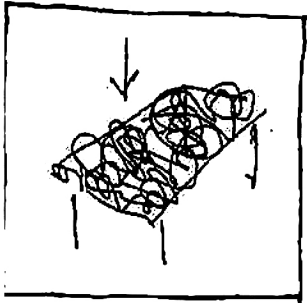
YOU CAN PRESS THAT TANGLE INTO A SHEET



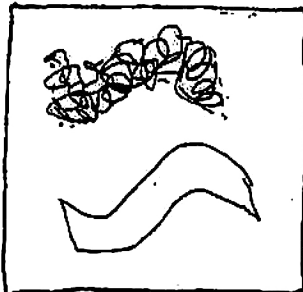
YOU SHOULD FIX THE TANGLED WIRE IN MANY SPOTS:



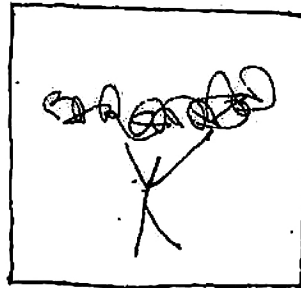
THE RESULT WILL BE AN IRREGULAR FELT



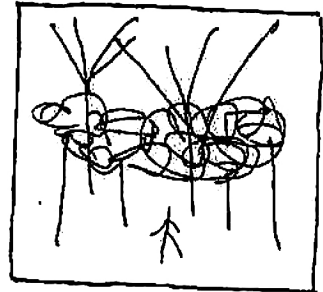
THIS "METAL-FELT" WILL BE FLAT AND VERY RESISTANT



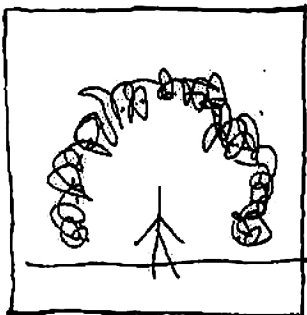
YOU CAN USE IT AS YOU WOULD DO WITH A FULL METAL SHEET: BEND IT, STRESS IT: ETC



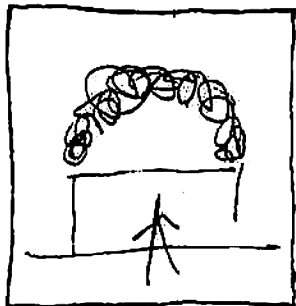
IT HAS THE ADVANTAGE TO BE VERY LIGHT AND SOLID



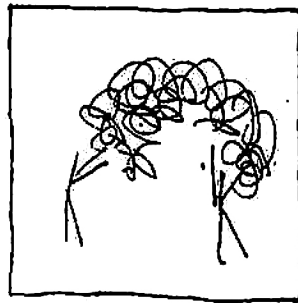
AND (OBVIOUSLY) TRANSPARENT



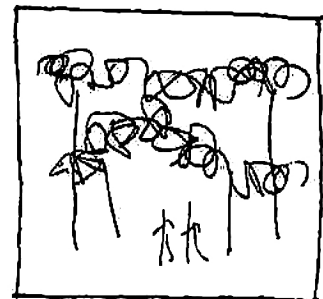
BUILDING A SHELL OF WHATEVER SHAPE



OR A DOME

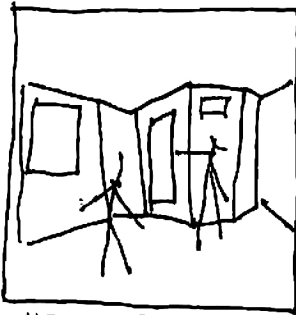


WITH "METAL-FELT" IS EASY TO DO

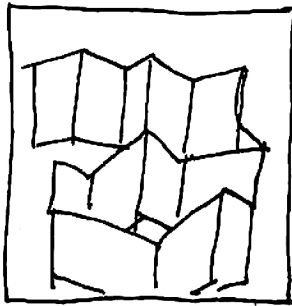


AND THE RESULT IS SURE TO BE BEAUTIFUL

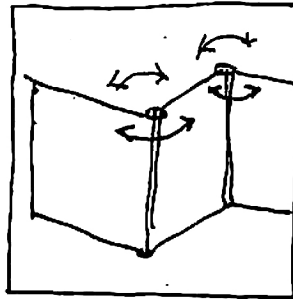
PANEL CHAINS



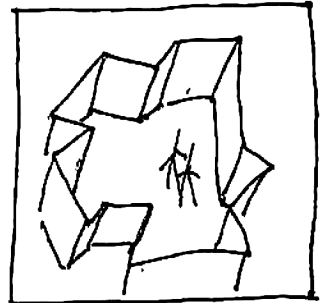
THE SIMPLEST
IRREGULAR STRUCTURE
I CALLED
"PANEL-CHAIN"



IT CONSISTS OF
A RIBBON
MADE WITH PANELS
OF VARIOUS SIZES



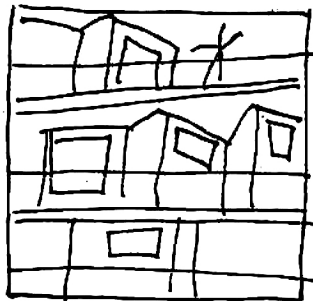
WHICH ARE LINKED
TOGETHER
WITH ELASTIC JOINTS



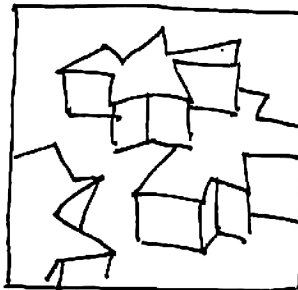
THUS THEY CAN BE
DISPOSED
ALONG ANY OUTLINE
YOU WISH



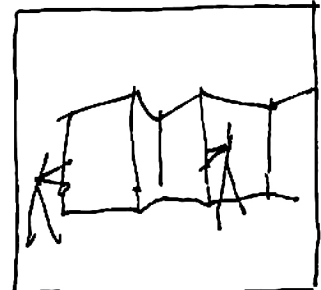
THE PANELS
OF A PANEL-CHAIN
ARE NOT NECESSARILY
STRONG ENOUGH
TO SUPPORT A ROOF



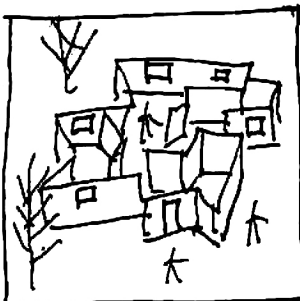
A PANEL CHAIN
SERVES TO DEFINE
AN ENCLOSURE



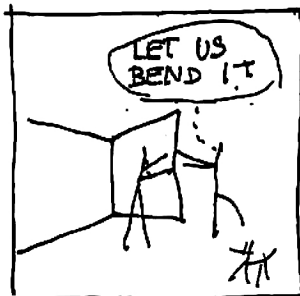
WITHIN A LARGE
SKELETON,
LIKE THE
"VILLE SPATIALE"



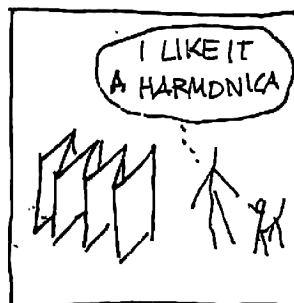
IT IS LIKE
A FOLDING SCREEN



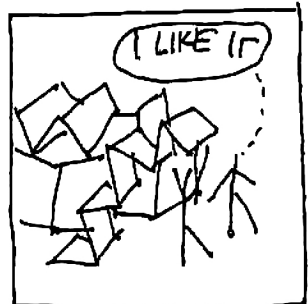
WHICH PERMITS
TO INSTALL YOUR
FLOOR PLAN



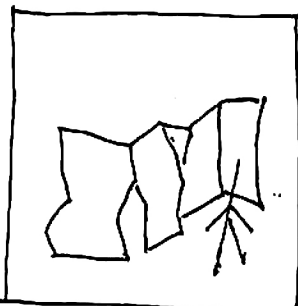
AND TO MODIFY
IT WHENEVER
DESIRED



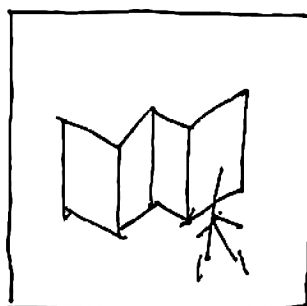
THERE ARE NO RULES
HOW TO PUT
THE PANEL-CHAIN



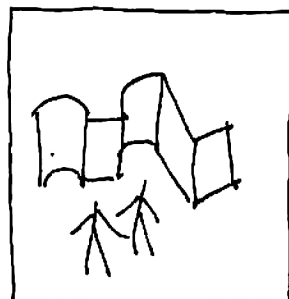
EXCEPT THOSE OF
YOUR PREFERENCE



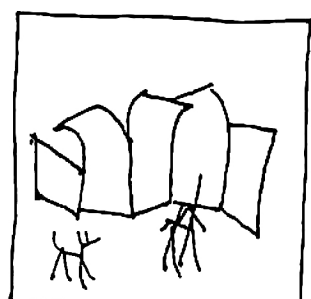
OBVIOUSLY THE PANELS
OF THE CHAIN
CAN BE OF ANY KINDS



PLAN ONES,

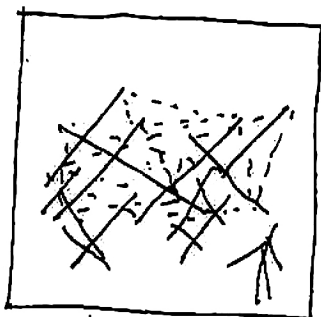


CURVED ONES

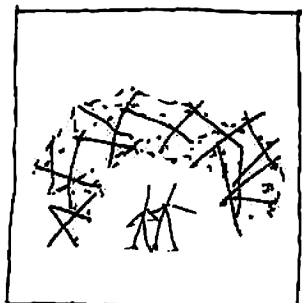


OR WHATEVER YOU
WANT

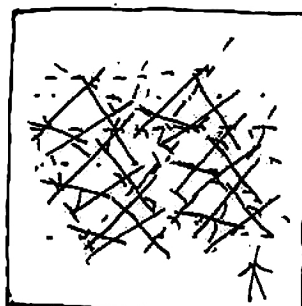
IRREGULAR TENSEGRITY



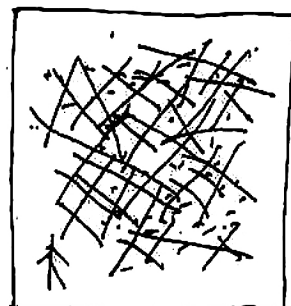
TENSEGRITY STRUCTURES WERE FIRST PUBLISHED - AS I KNOW - BY BUCKY FULLER



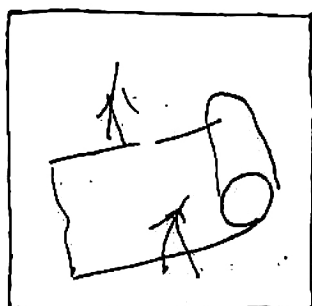
MANY RESEARCHERS WERE DEVELOPING FURTHER THAT IDEA



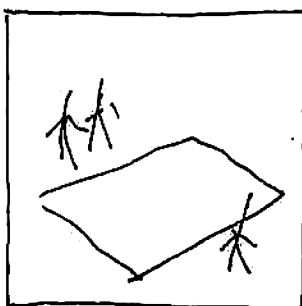
ALL THOSE STUDIES WERE BASED ON STRICT GEOMETRY



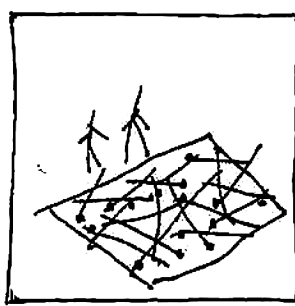
BUT IRREGULAR TENSEGRITIES CAN BE PRODUCED



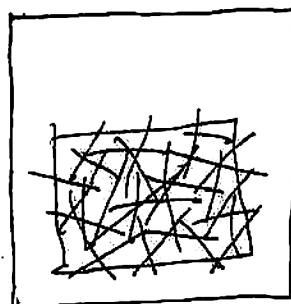
FOR IRREGULAR TENSEGRITIES MEMBRANES ARE USED INSTEAD OF ROPES



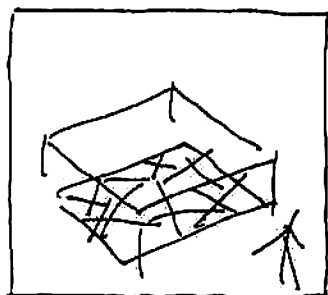
STRETCH OUT A SHEET OF SOFT PLASTIC FOIL



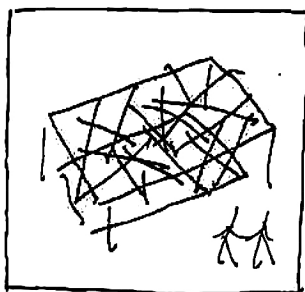
FIX THE PRESSURE RODS (I CALL THEM TENSORS) ON THAT SHEET BY ONE OF THEIR EXTREMITIES



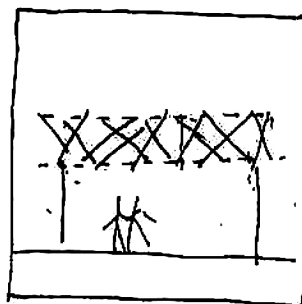
IN A CRISS-CROSS ORDER YOU LIKE



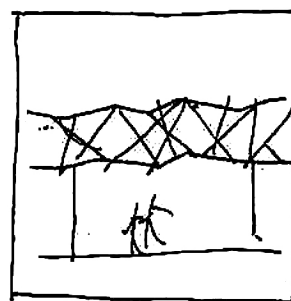
STRETCH A SECOND SHEET AT SOME HEIGHT ABOVE THE BOTTOM ONE



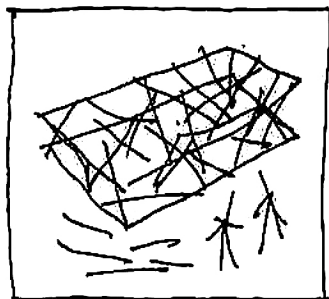
AND FIX THE FREE EXTREMITY OF THE TENSORS TO THE UPPER SHEET



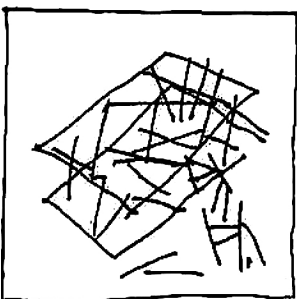
YOU GET THUS A STRUCTURE WITH THE RODS TAKING THE PRESSURE



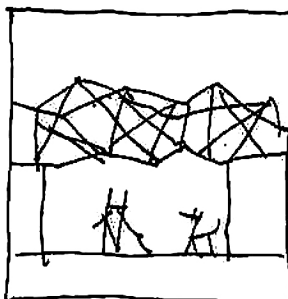
AND THE SHEETS THE TENSION SERVING IN THE SAME TIME AS ROOF-SKIN



THE PATTERN OF THE RODS CAN BE



WHEN BUILDING YOU WILL SEE WHERE RODS MIGHT LACK

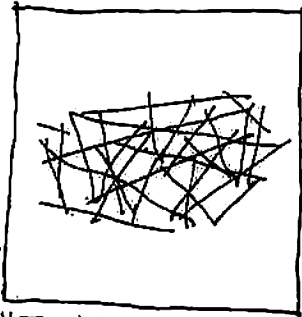


IT CAN BE A FANCY STRUCTURE

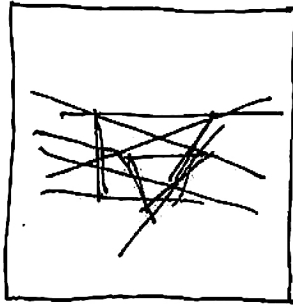


ON THE SITE HAVE BEEN BUILT IT

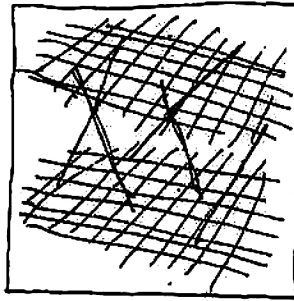
PSEUDO-TENSEGRITY



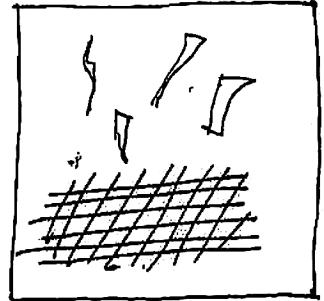
"TENSEGRITY" MEANS A STRUCTURE OF TENSION AND COMPRESSION MEMBERS



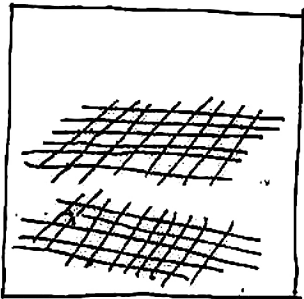
USUALLY IT IS MADE WITH ROPES AND WITH RODS



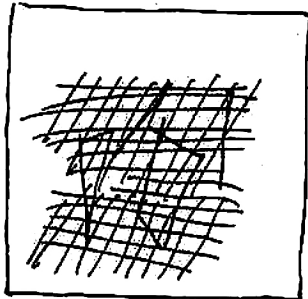
BUT IT CAN BE MADE ALSO WITH SOFT GRIDS AND STIFF COMPRESSION ELEMENTS



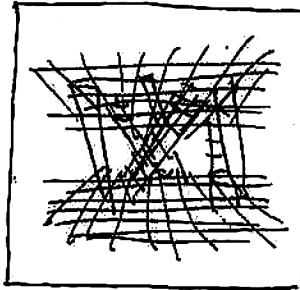
THUS GRIDS SUBSTITUTE THE ROPES AND THE RODS CAN BE OF ANY SHAPE



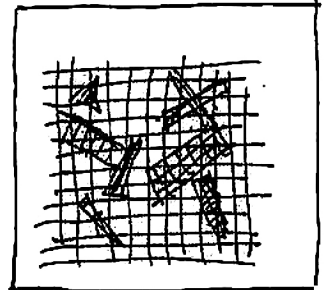
COMPOSITION OF A PSEUDO-TENSEGRITY STARTS WITH TWO LAYERS OF GRIDS



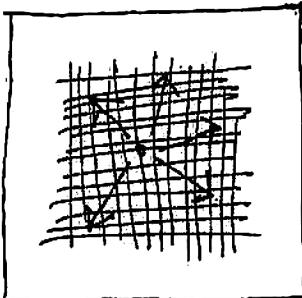
SPANNED WITH THE COMPRESSION MEMBERS



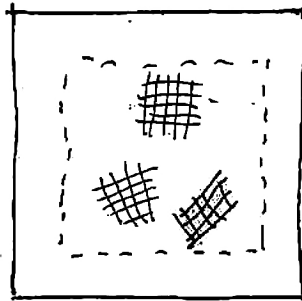
KEPT IN THEIR PLACE BY SMALLER PIECES OF GRID



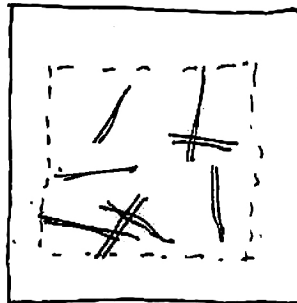
A PSEUDO-TENSEGRITY DOES NOT FOLLOW STRICT GEOMETRIC ORDER



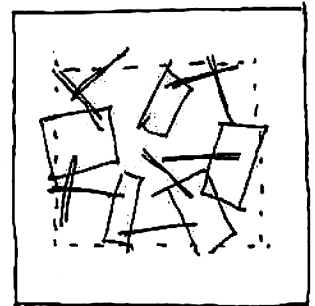
AS A GRID OPPOSITE TO A ROPE-NET DOES NOT IMPOSE PRIVILEGED AXES



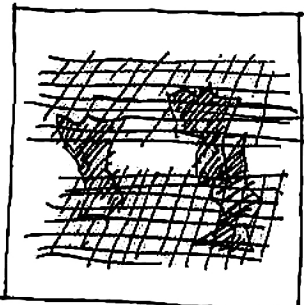
THUS ... BOTH THE TENSION MEMBERS



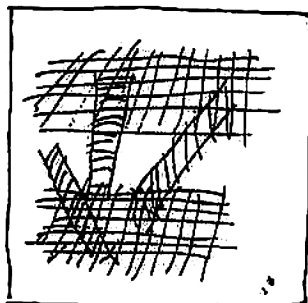
AND THOSE FOR COMPRESSION



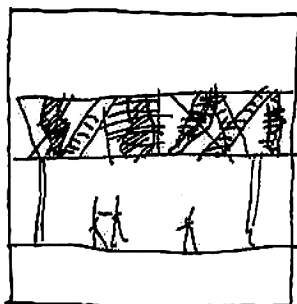
CAN BE DISTRIBUTED IRREGULARLY



COMPRESSION MEMBERS OF ANY SHAPE



TENSION NETS ALONG ANY PATTERN

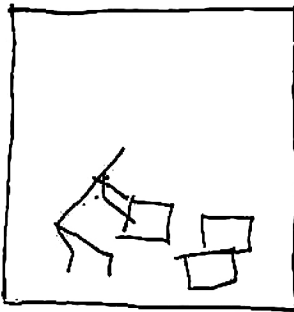


MAKE SUCH A STRUCTURE

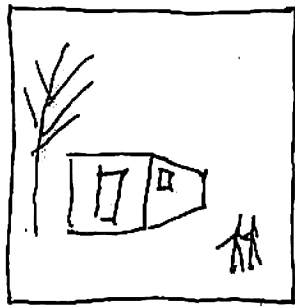


INTO A SORT OF ARTIFICIAL JUNGLE

THE "TRAIN"



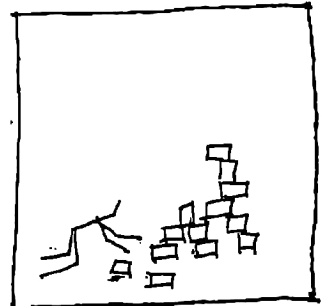
YOU CAN BUILD
IRREGULAR STRUCTURES
ALSO WITH REGULAR
ELEMENTS



FOR EXAMPLE,
WITH CONTAINERS



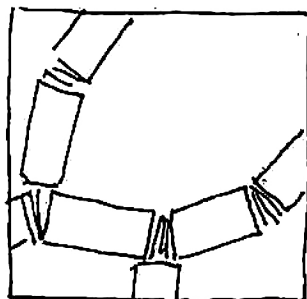
CONTAINERS
CAN BE STOCKED
IN HEAPS



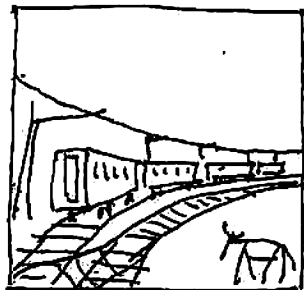
YOU CAN BUILD WITH
THEM CONFIGURATIONS
LIKE WITH CHILDREN'S
BUILDING BLOCKS



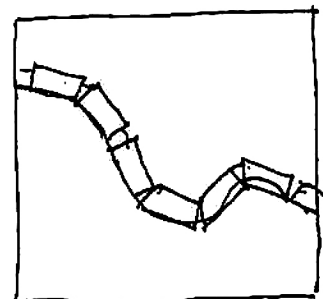
ONE INTERESTING
CONFIGURATION
IS WHAT I CALL
THE "TRAIN"



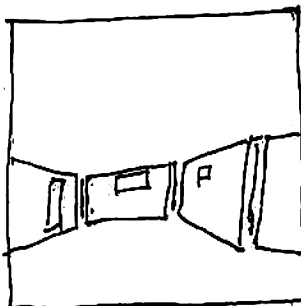
IT IS A LINEAR
DISPOSITION
OF CONTAINERS
LINKED THROUGH
SOFT CORRIDORS



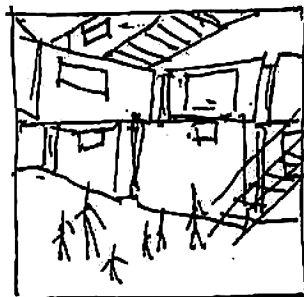
LIKE THE WAGONS
OF A TRAIN



SUCH A "TRAIN"
CAN FOLLOW
COMPLICATED CURVES



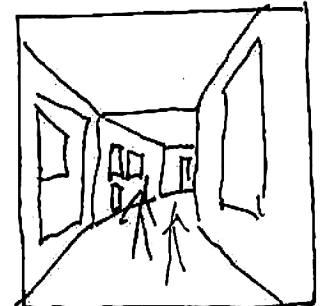
IN ONE LEVEL



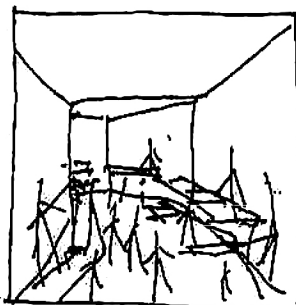
OR IN LOOPS
AT SEVERAL LEVELS



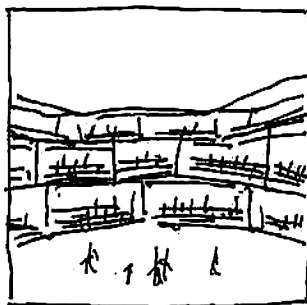
THERE ARE, IN
ARCHITECTURE,
TASKS IMPLYING
LINEAR LAYOUT



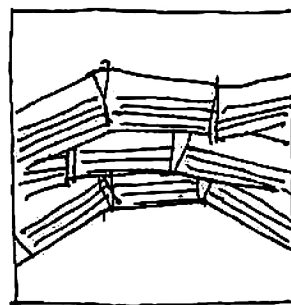
FOR EXAMPLE,
EXHIBITIONS



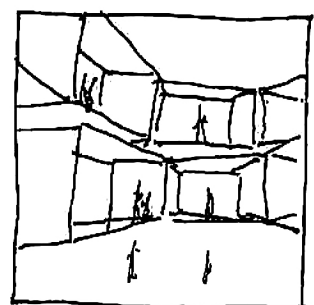
BAZARS,



EVEN TRIBUNES



ALL WHICH HAVE
NOT TO BE
DISPOSED REGULARLY



AND CAN BE
DESIGNED AS TRAINS

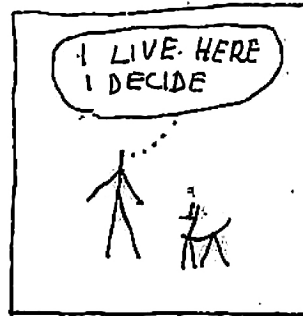
SOCIAL IMPACT



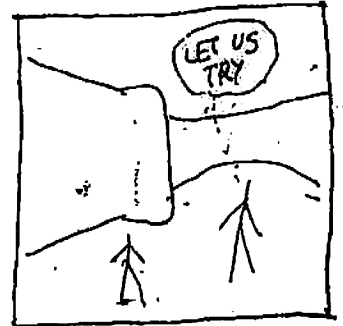
IMPLICATIONS
IN ARCHITECTURE
FOR A SOFT SOCIETY



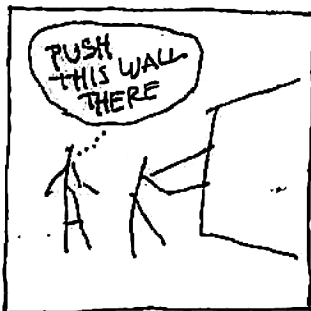
CONCERN, FIRST
WHO MAKES
WHAT DECISIONS



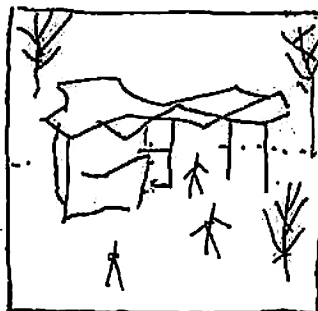
MORALLY IT IS CLEAR:
IT HAS TO BE
THE INHABITANT
TECHNICALLY
THIS IS MORE DIFFICULT



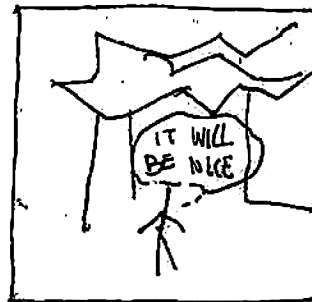
HIS NATURAL METHOD
IS 'TRIAL AND ERROR',
WHAT IMPLIES
ULTERIOR
CORRECTIONS



CORRECTIONS
DEMAND TECHNICAL
FACILITY
FOR THE 'LAYMAN
TO PERFORM



'TRIAL AND ERROR'
IS POSSIBLE
ONLY IN FULL SCALE
ONLY ON THE SITE
IT IS MORE
THAN A GAME



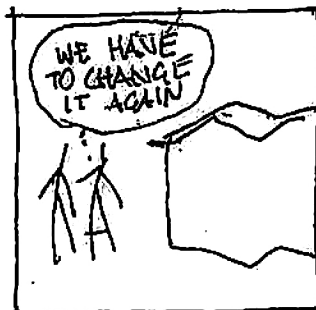
CORRECTIONS ARE,
IN MOST CASES,
IMPROVISED



(LIKE EVERYTHING
IN LIFE)



IRREGULAR STRUCTURE
ARE THUS MOST
APPROPRIATE



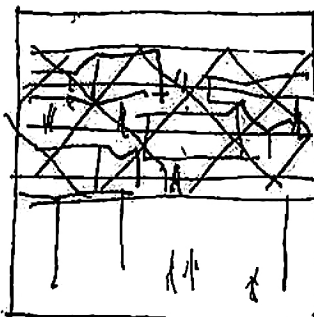
TO CONTINUOUS
CORRECTIONS



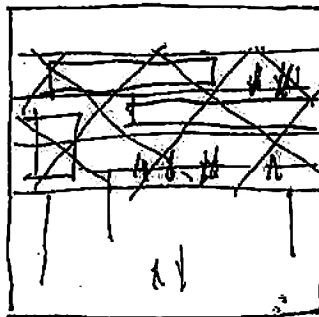
EITHER SPOTWISE
IN A COLLECTIVE
FRAMEWORK



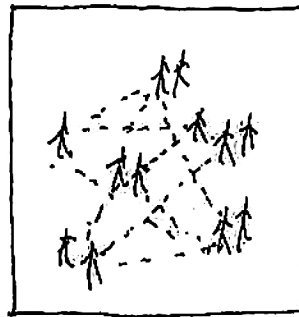
OR IN ISOLATED
INDIVIDUAL HOMES



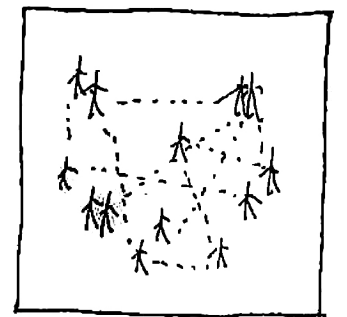
MOBILE ARCHITECTURE
IMPLIES IRREGULAR
RANDOM DISPOSITIONS:



THE ARCHITECTURAL
OBJECT CHANGES
WITH THE INHABITANTS'
LIFE PATTERN

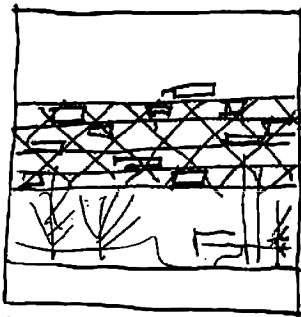


SOCIETY IS NOT A
MECHANISM
BUT A PROCESS

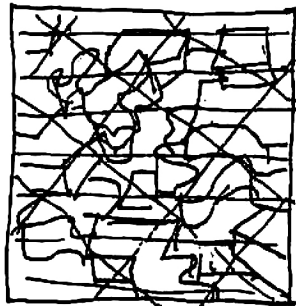


WITH NO FINAL STATE

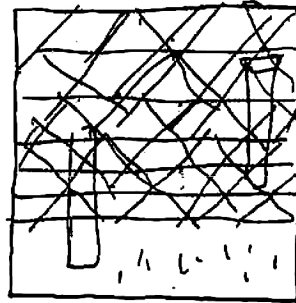
THE "VILLE SPATIALE"



LAST, BUT NOT LEAST, I GET BACK TO MY FAVORITE IDEA: THE "VILLE SPATIALE"



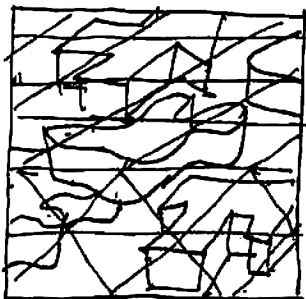
IT MEANS A PARTICULAR MIXTURE OF RULES AND IRREGULARITY



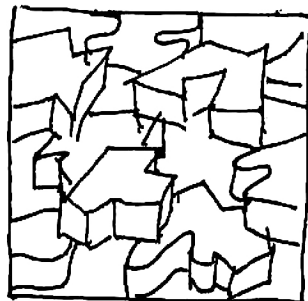
THE "VILLE SPATIALE" CONSISTS OF A MORE OR LESS REGULAR RIGID SUPPORTING GRID: THE "INFRASTRUCTURE"



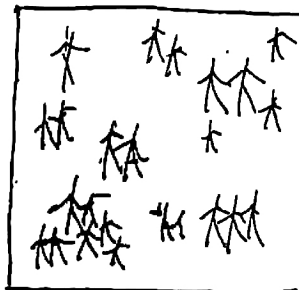
WITHIN WHICH INDIVIDUAL HOMES ARE INSERTED FORMING AN IRREGULAR PATTERN



AS FOR THE SHAPE OF THOSE INDIVIDUAL HOMES ANYTHING GOES



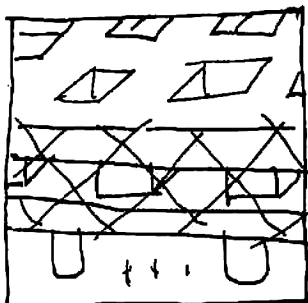
THUS THE "VILLE SPATIAL" IS A "MERZSTRUKTUR" AT URBAN SCALE FOR A MASS-SOCIETY CONSISTING OF INDIVIDUALISTS



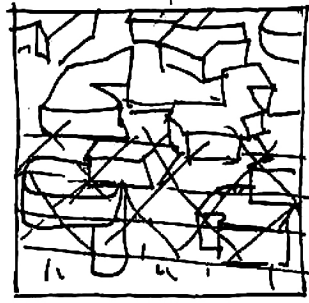
THIS IS OUR SOCIETY TODAY: A CROWD



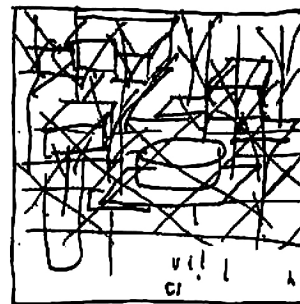
I DO NOT KNOW HOW A "VILLE SPATIALE" WILL LOOK



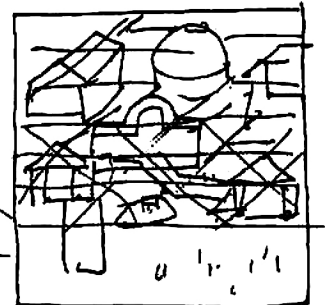
IT CAN BE THIS



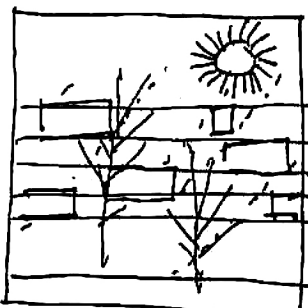
OR THIS



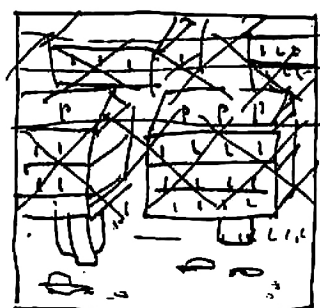
OR THIS



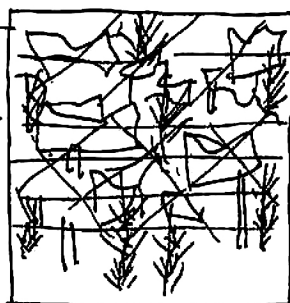
OR ANYTHING ELSE



THERE IS NO GRAMMAR TO THE "VILLE SPATIALE" EXCEPT RESPECT



IT CAN LOOK AS WELL AS THE CITY YOU LIVE IN

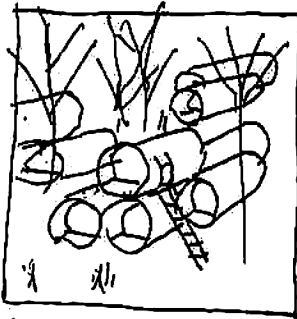


OR IT CAN BE COMPLETELY UNLIKE TO ANY CITY

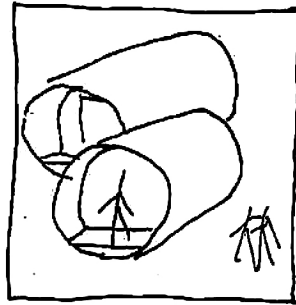


IT CAN NOT BE PLANNED, IT CAN ONLY HAPPEN

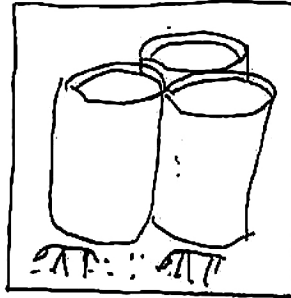
CYLINDERS



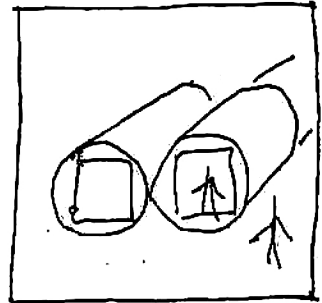
ANOTHER IRREGULAR ARRANGEMENT OF REGULAR COMPONENTS



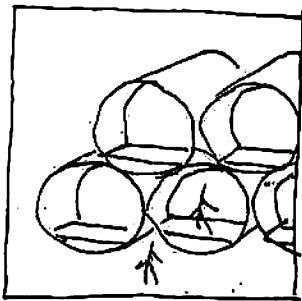
CONCERNS CYLINDRIC CONTAINERS



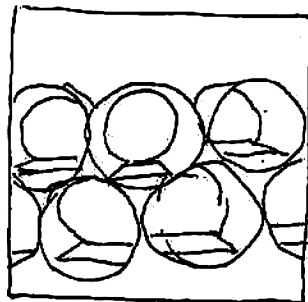
CYLINDERS ARE USED IN FARMING AS SILOS



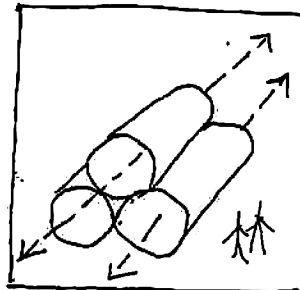
FOR STORAGE, FOR PASSAGES, ETC



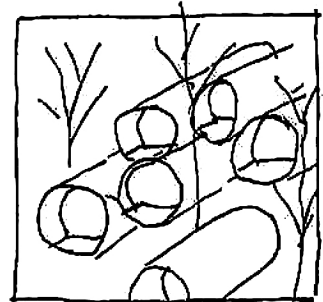
CYLINDERS CAN BE RANGED AT SEVERAL LEVELS



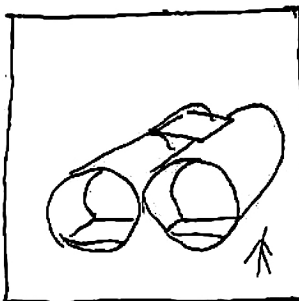
FORMING THUS MULTISTOREY SHELTERS



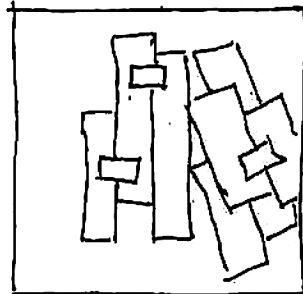
SUCH ARRANGEMENTS FOLLOW DEFINITE AXES THIS IS A CONSTRAINT



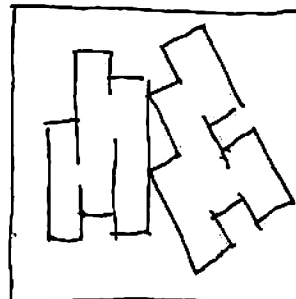
BUT SHIFTING THE CYLINDERS ACCORDING THESE AXES STAYS FREE



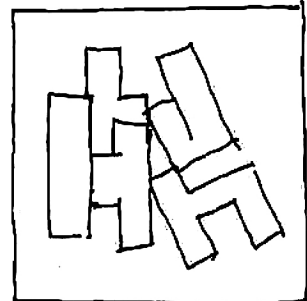
IT IS TECHNICALLY NOT TOO COMPLICATED TO LINK CONTIGUOUS CYLINDERS



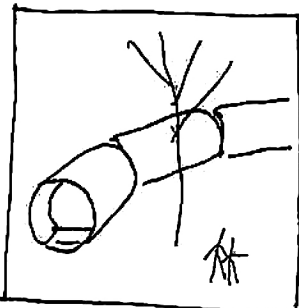
SHIFTING AND LINKING CYLINDERS



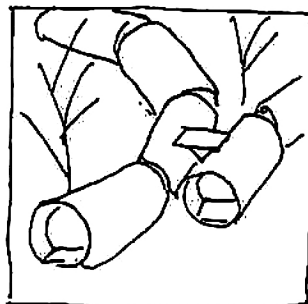
PRODUCES A LARGE VARIETY OF FLOOR PLANS



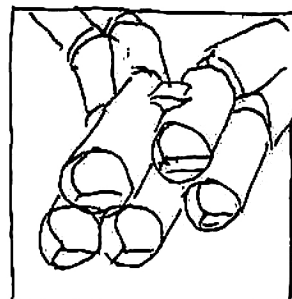
WHICH CAN BE CHANGED EASILY



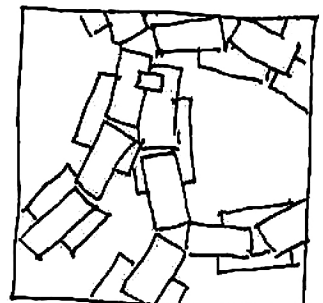
CYLINDERS ALSO CAN BE LAID OUT IN "TRAINS"



WHICH CAN BE EXTENDED THROUGH LINKING



SEVERAL TRAINS HAVING ALSO MORE THAN ONE FLOOR



THERE ARE MANY ROADS TO NEW URBAN PATTERNS