

## UNIVERSITY OF OKLAHOMA

 COLLEGE OF ENVIRONMENTAL DESIGN
## TELESIS

"THE DELIBERATE, PURPOSEFUL UTILIZATION
OF THE PROCESSES OF NATURE AND SOCIETY
TO OBTAIN PARTICULAR GOALS."
(from DESIGN FOR THE REAL WORLD, VICTOR PAPANEK)

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## TELESIS: OPINION

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& \text { regional director of sc/aia): } \\
& \text { MIKE PRICE }
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# SC/AIA 

## *notes

## meeting

Friday, 3:00 p.m. in the gallery.

## bottles

We have been blessed with about one hundred carboy bottles that make great terrariums. They were not free, but almost all the money we can get by selling the bottles will go to SCAIA. This money is needed if we are to continue Telesis and pay for the van. Special deals to members.

## miami ?

The Association of Student Chapters of the ATA is holding their annual Forum
at Miami University over Thanksgiving. If you would like to go I have some information. OSU is taking a car or two and has room for riders.

## osu/Ou

We have been invited to an after game get-together by the OSU architecture students, Dec. 1. Those interested contact me. Even if you don't have tickets to the game think about going anyway.

## speakers/films

We may be missing an opportunity to get an outstanding speaker or film here because no one wants to take the time to fill out the proper forms. There is student money available for speakers who have a campus-wide appeal. If you have a culture hero you would like to see in person, fill out the information the Speakers Bureau wants and maybe your dream will come true. The same goes for movies. For example someone like Bucky Fuller would qualify or the film about him. This would be a 3 or 4,000 dollar freebee! I do not have time to do this - how about a volunteer out there.

## state aia

Mark Seiley and I attended the state AIA board of directors meeting, Friday, November 9, in Oklahoma City. Although we went with the intention of observing what they are doing. They were interested in what we students are doing. I believe that it was a very worthwhile meeting.

The architecture profession is having its problems at this time due to the recent Agnev scandal and other similar situations across the nation. As a result the AIA is no longer suggesting fee schedules and has begun to work to combat unfavorable leglislation and publicity.

In the future we are going to try to improve communications between the state ATA and the SCATA. An active student relations chairman has just been appoint ed so, I feel very optimistic about working with the state AIA.

## misc.

If you haven't read the headlines yet, I was elected (without opposition) as regional director of the SCATA. That was at Wichita ATA regional conference which turned out to be a good-trip. Next year the conference is at Tules, and we have been asked to parricipate in putting it together.

Dean Hodgell would like to hold an open, informal meeting or forum each Friday afternoon (or at least once a month) for all students in our school. What is your leeling on this? Let Dean Hodgell or me know.


## Elton Abbott

The name Elton Abbott is synonymous with one who has increased the experience and techmical expertise of many people. It seems he enjoys working as the German word "funktionlust" describes the joy of functioning; trying a mew skill with delight.

Elton has been a graduate teaching assistant of graphics I, II, aria III for seven semesters, and has managed the photo $\begin{aligned} & \text { ab for nine. His }\end{aligned}$ undergraduate degree is in medical technology, and the combination of knowledge has been very fruitful. For example, for a major design project of a Community Health Center, Elton knew first hand of the needs and vocabulary of the hospital's personnel. At the end of this month he is going to the Institute of Hospital Design in New Orleans with his way paid, as ore of the ten graduate students in architecture in the United States chosen to go. (Incidentally, Elton received the AIA Wade Scholarship for the fall semester, 1972.)

A broad experience is
very good, Elton feels, and he expresses, "If you are alive, you are not wasting your time." Most recently he was a coeditof and coproducer of the first TEELSIS and presently is continuing a contributing and producing role.

Burglars have hit Elton severely the past two years. A total of $\$ 1,400$ worth of personal equiptment has been stolen from his office.
Consider the pay of a graduate teaching assistant and you will see it a a severe loss.

Although he hasn't
mentioned his future plans to me, I really hope he gets what he wants. - Edita


## SUGGESTIONS FOR COPYING

 ARCHITECTURAL DRAWINGS
## Photo Hints

The type of work to be copied will vary from pen and ink drawings to water color boards, however good quality reproductions can be made photographically if these fundamentals are applied to copy work.

1. LIGHTING must be uni-
form. The type of light is determined by the film you will be using. In general, $48^{\prime \prime}$ fluorescent tubes provide an even light source for copying black and white work. Also, the color temperature of these lights can be corrected when printing color negatives. See DIAGRAM for light set up.

2. SEIECT the correct film for your subject. Line drawings copy well with HIGH CONTRAST COPY FILM. Please note that processing of the film is similar to other b/w films with the exception of requiring Kodak D-19 developer. If you have color work to be printed------always use colox negative film! Prints from slides are possible but it is much easier to print directly from negatives and the quality of print is much higher.
3. USE A TRIPOD. The light level may require long shutter times. In addition, set up for perpendicular placement of camera is assured with the tripod. (If you are not "square" with the copy board, the print will be distorted-square rooms appear trapezoidal!)
4. DON'T forget to shoot titles. Photo portfolios look better with printed title blocks.

SEE YOU AT THE EMPLOYMENT SERVICE Ector Absott


PLAN **

WINNER**** of the ENVIRONMENTAL CONSERVATION and ENERGY PRODUCTION award for this week goes to HANK SPELUNKER of Turtle Creek, La, Hank is a graduate student and did this unobtrusive design in his class, "Introduction to Regressive Architecture", ARCH 7001.

* alias Mark Seiloy


## Com

"Laws are like spider webs, easily broken by the powerful, while they entrap the weak." This is one of my favorite heavy quips, and it just about describes the school of architecture's situation. As most of us know the school has gotten the shaft from the university and there is no sign of retraction. Our facilities are poor, our faculty is grossly mistreated and underpaid - so what can we do? I talked to one of the 0.U. regents last week, and he told me "ya gotta have somebody pitchin' for ya." Mercy, logic, and fairness are absolutely of no concern in the university's decision-making process. But even a stray dog hanging around the back door will get fed just because it is there, so our school will survive.

Now there is another situation that we students have more control over or at least the potential to cope with. As it stands now, the UOSA is hopelessly preoccupied with itself and is careening headiong toward bureaucratic oblivion. Somewhere along the line the UOSA has forgotten that this university is not a microcosm of this state. Even if it were, the UOSA should be setting a good example instead of copying the ills of a sick society. This situation we can do little about because we are too busy and too disinterested to play their game. We as a group could probably have elected all of the commute congressmen recently if we had tried, but I couldn't find one person who would run. (I don't blame them either.)

So if we are to have a strong student organization, it isn't going to come through the mercy of the UOSA or by a pie-in-the-sky scheme like SHARE, INC. It will have to come from us on a year after year basis. We must have two things: organization and money. In the past we have organized to get money which is not productive. The money needs to be there on its own so that the organization can work for the school.

To achieve this I would like to suggest the following: That the SCAIA change its constitution so that a student pays dues only once while he is a student. In this way some consistency and independence could be achieved, and all students would be more likely to take part in SCAIA. At, let's say, $\$ 5$ a membership a steady annual income of around $\$ 300$ could be counted on and at a minimum of hardship or inconvenience to the students. This money could still be supplemented from other sources for special projects. We will discuss this more at the meeting, and if you have a suggestion please give it.

I would like to say one more thing somewhat more related to my opening statement. Architects and architecture students are in general highly independent, vocationally oriented, extremely busy, and underpaid people. Therefore, I can see why we stiek to ourselves and only grumble about government and society. But many of the things that trouble us are brought upon ourselves because of this attitude. If we don't get together like other professions, trades, workers, and students do, then we are going to be lost.

## Guest Article

## IEVER!

Perhaps you remember lancy Drew, girl sleuth and olver of countless mysteries eginning with the Secret of he Old Clock and the lystery of the Hidden Stairase. While Tom Swift and he Hardy Boys have fallen y the environmentally inderdesigned wayside, lancy Drew has been living life of intrigue, wrighting mongs since Frank Lloyd's reative youth, and now, at ixteen, she hasn't aged a lay and is still blond and unningly attractive, though ise beyond her years. Ithough Ms. Drew hasn't rown older since her heyays of the 30 's, she has anaged to branch out a it over the last 40 years nd get.her degree in Arch./ nvironméntal Design (she sn't quite clear which one) nd is working towards a aster's at the famed merson College. Emerson s located in some unnamed id or southwestern state here, if you will remember, ancy's honey, Ned Nickerson as a sophomore for countless ears and undoubtedly beat citz Kaeser's all time adergraduate longevity ecord.

Although Ned is quite hopelessly in love with our heroine and hopes to perpetrate a tradition from the 30's and (YEE GODS!) marry her some day, thereby hoping to thwart her career, he is allowed no contact that is vaguely physical. Occasionally when they are alone together he lets a leading remark drop. Nancy immediately "blushes to her fingertips" as she is often wont to do and quickly changes the subject. Actually we never hear too much about Ned. "Where is Ned?" someone will ask. "Oh, he's in South America." Nancy will reply. So much for Ned.

After it finally dawned on Nancy that Ned was never going to amount of much and she was the one with the brains, she decided to persue her interest in architecture sparked by her constant contact with haunted houses equipped conveniently with hidden staircases, sliding panels and various nooks and crannies cradling a multitude of Goffian surprises. OH FIE! THE NOTE! It appeared one day as Nancy was busily trying to meet a deadine on a set of working drawings for a creative little blu.e roadster lot and adjoining truckstop. (Nancy is an expert on blue roadsters because everytime some slimy gangster tries to scare her off a case by cutting her brakeline or smashing in the
windshield of her cute lil
blue roadster, Nancy's distinguished rich lawyer father, Carson Drew, buys her a new one. She's on her 39th now and, while once during the Mystery of the Robie House she had to settle for yellow, she prefers blue because it matches her eyes.) On this

Particular day Nancy found a poison rapidograph note taped to her T -square in a most outrageous fashion. Although Nancy is an expert on deciphering handwriting-a tip picked up from her well known criminal lawyer father, Carson Drew, whe was unable to make any steps towards linking the note with the
(CONTINUED)


## (CONTINUED)

writer- except for one thing; he was an architectbut all those damn architects write alike! The message made one thing perfectly clear. "This here scule aint got
no rum for you girlie. Git owt or I will torch the Kemp House."

A bit of background here. The Kemps, like all the protagonists Nancy defends, are a poor but well educated family for whom Nancy was creating a low cost high interest home out of egg cartons, acrylonitrile butadiene styrene and vegetable waste which she got free at her friendly neighborhood grocery. This tip was inspired by one of her professor's materials course. (You might have noticed how Nancy is always quick to pick up a tip.)

As for the antogonists
Nancy seems to be in constant conflict with- they are always inarticulate and vulgar bastards who have a regrettable preference for checkered suits, yellow overcoats and elevator shoes. They are also identifiable by some physical deformity such as a bananna nose or a missing finger, though they ceased to have names like Sellerstein and Jacobs by the $1960^{\prime} \mathrm{s}$ and now are generally called spike, Red or Snorky. But their grammar is the dead giveaway and jealous architects are no exception.

Now our Nancy is no whimpering willow and a gleam appeared in her eye as she read the note. This woman has been bludgeoned into unconsciousness on countless occassions by miscreant crooks (though thankfully neveronce, ahem,taken advantage of.) and she is not one to be put off by an idle threat. She immediately jumped up from her drafting table to purge the architecture scule of unenlightened, chauvinistic and illiterate elements which were threatening to stand in her way and prevent her goodly glow from warming that nice Kemp family.

Shore nuff as Nancy rounded the last bend after a 30 minute hike from one end of the school's interminable hallway to the other, passing what they laughingly referred to as studios, she came across a rather oily looking character with coarse hair, a checkered suit and elevator shoes-obviously a bonafide felon.

Now we run into the problem of anti-climax. Just so we dont get bogged down in the primordial slime, we'll wrap this one up quickly.

Nancy, never so uncouth as to attack first, questioned the poor, male type fool and found that his problem was simple-another frustrated designer! The truth was out and as Spike lunged for her throat, Nancy countered with her 42" T-square and a well placed knee. During
the brief fracas Spike unfortunately fell 3 stories from an open window with visions of Cherokee Gothic dancing before his beady eyes. So much for Spike. A brief followup for you romantics out there. Nancy's antagonists, even the most unenlighteded, never die. Spike was found by a lost jock who was taking a short cut and carried him to the helpful, though bureaucratic health center, where they decided
that his problem was mental rather than physical and he underwent counseling in hopes that certain chauvinist tendencies could be put in correct 1 point perspective.

Nancy, our honey, went on to finish the Kemp House and even helped them move their few good antiques from their run-down old house to their progressive new one.

Next month Nancy takes on certain misguided provost who were instrumental in furthering the demise of the Environmental Design Dept. of her beloved Emerson College while continuing her battle against oppression of women, Croatians, architects, and other minorities.

## ANN HIRSCHI

(Thanks to Ms. Eve Ness and Saturday Review Magazine, January, 1969 for inspiration.)

## WHERE ARE WE GOING?

BY THE EDI ium was completely vertical. leon, who had been having trouble making blueprints while the building was mildly tilted was now enraged, muttering, "Dumb facilities-can't even stay on the ground right!"

Screaming rocket engines, flames burning the grass on Owen field, what would happen but most of the upper part of the building separated and took off!

Some policemen in a white station wagon waved goodbye. Caryl handed Pat one of her handkerchiefs to cry in while she used the other to cover a falling typerwriter wound. The typerwriter simply couldn't be used with all the greasy innards exposed:
(Little known to the flying occupants, only the department of Architecture had blasted off much like the Eagle blasted away from its descent stage.)

Finding the ladder was easy enough-pry open the janitor's closet. Rope, however...but wait! Bret Carson brought climbing ropes to school today for show and tell! "Bret! Where is Bret?" people asked each other. Bret, however was one step ahead and came into the gallery with a group he had rescued from the library with his rope.
(CONTINUED)


Meanwhile, Elton had found a broken window the physical plant never came over to fix. Quickly a sub task force was dispatched to get patch materials from Bertha's store. They were up to the sub task and came back with some illustration board and chewing gum for sealant. Gum was passed out and the task force went to the task with little other than "grmns" and "shcussschussschusss" to say.

Some people drifted in with tackle boxes and X-acto knives, hoping to be of help. Drifted! Suddenly everyone realized they could float around. Parties were dispatched to turn on the radiators and lights as it was getting cold and dark outside. Others broke open the candy and drink machines to take stock of the food situation. Meanwhile, the window was finished and airtight.

Pat stopped crying and amazingly, this allowed her to think more clearly than everyone else who was still half hysterical. She thought to herself, "Every rocketship has a control room!" and began floating around looking for it. Not the shops...not that wierd looking door that is always locked...but wait! What is that whirring and humming comming from that mysterious unused office on the third floor between the stairs?

Nudging open the unlocked door, she at once spotted a dust mop leaned up against the light switch on the far wall. Using her liberated woman's intuition she floated over and switched the second switch beside it.

A fransformation! The desk top glided back ever so quietly to expose what appeared to be control panel! Not the usual dials lit up with green from behind, but glowing purple knobs, viridran knobs and yellow-ochre knobs in front of like colored glass plates. It looked like an architecture student's kinetic sculpture, but from what century?

No one had followed her, so she alone knew this secret. Who should she tell?

Mr. Kemp? Mike Price? The गTELESIS staff? See next month's exciting continuation! Same place, same time, =same channel.

Henry Hepburn comes from the Bahama Islands, and is one of ten Bahamans on campus. This former British Colony received it's independence just July 10 this year. He is the second oldest in a family of eight. One main adjustment Henry feels he has made is moving into a minority black situation.

On this theme of cultural differences, he feels it is not absolutely necessary to integrate cultures. Much can be accomplished with mutual respect. A $t$ mutual respect is born of appreciation, and not out of fear of the power of the other.

He feels blacks have been the most outgoing and friendly toward him while some whites have been friendlier when they learn he is of foreign origin. Mainly from second hand reports Henry has encountered the prejudice here in housing and jobs. Since I have seen some of Henry's artwork and consider it beautiful, I asked him about ugliness and beauty.

He considers the way some people speak ugly, and the way some aspects of the American economy runs. For example, the processes involved in finding out is a patient can pay before he is treated at a hospital.

Beauty is in the changing seasons he says, along with some comments on how to change ugly to beautiful. Many places like the duckpond simply need to be cleaned up. People, if they do wrong to a fellow man, must make up twofold toward the good.

## Foreign Students <br> $\mathrm{S}^{2}$

Being a resident adviser for two semesters, Henry finds that he likes working with people, helping when possible. This brings him much enjoyment.

- Elita


Henry
Hepburn

## TEDNOTES

-ED WOODS needs volunteer's for his student committee for the study of finance and accreditation. (Ereshmen and Sophmores this concerns you!)
-Those wishing to have "Open House" functions as in previous years-offer your services to Greg Hack. (Need to contact architects and manufacturers to bring displays and merchandise, etc.)
-Membership forms have not yet arrived-watch this paper for announcement of their arrival.


## Design 1

Ms. Johns is conducting her classes through various phases of graphic expression of the self. Some means have been line and pictorial progressions. In these, the students express themselves, graphically, and, through comparisons, see themselves in relation to others.

Mr. Knor's class has been exploring geometric forms in relation to design. They have studied: 4-axial symmetry, antimorphic symmetry, curvilinear design, and circles with foreign geometry. Some of their projects have been displayed and they have held interesting crit sessions in the lab.

## 4535

The two sections have solved their spacial problems as shown on the accompanying map. The Pit was divided in half, one side rearranged, and the other side remaining the same. This creates a variety of spaces and a choice of atmosphere within the lab. One side is an open plan, and the other contains individual bays.

An actual working design problem, they were given certain requirements by Dr. Hodgell, such as versatility, maximum amount of space with a minimum amount of effort, and the class met and solved the problem.

## Design Classes

As for class work, Mrs. Kumar's class is again taking the environmental, analytical approach to living space design. The students each chose a site, and gathered This consists of each student selinformation. Mrs. Kumar gave criteria for, and selected one of the sites, and the students began designing. Mrs. Kumar lectured on human needs in the design of the site and the house interior and exterior.

Professor Wilson's class is also involved in design of a liw ving space. Each student is designing a home for their own family, choosing individual sites in the region. Their goals are to design for the site, gathering and utilizing functional information.

## 4547

The two sections of the working drawings design class have begun the working drawing stage and are progressing through the technical aspects of production and design. Professor Byrd and Mr. Olivo each give separate weekly lectures to their classes, covering new aspects of working drawings.

## 5555

The project in which Professor Sorey's class is involved, continues to be an obstacle, as a general attitude of the class. Behind schedule, they've reviewed phase 2 , development of the site, and have started on phase 3 .

a large, multi-storied building, vertical transportation and connection to present facilities, and mechanical and structural analysis. In this class, Professor Tuttle is acting as the client, and, though sparce, gave the class the requirements and information on the mechanical facilities.

The class has undertaken team organization and data gathering, however the analysis is on an individual basis, and the final design will consist of a maximum of two people. Final presentation will depend on the program, when it is finally revised by the instructors.

## 5562

The students in 5575 are also a part of an aesthetic criticism class, held as an input into their design class. They have heard lectures by, and discussed the views of various individuals and projects. They use this class for discussion of the analysis of the building on a user's point of view.

## 65876597

These two sections, taught as one group by Professor Arn Henderson, are undertaking projects of their own selection. These projects include: a Fine Arts center for a private school, low income housing for elderly people, an anthropological museum, a 75-150 bed hospital, an educational and therapeutic living experience facility, and
a glorified shopping center.
The group project in the class has sent out and recovered the questionaires and are tabulating their information. They have heard a lecture from Mr. Emerson, the designer of the building they are working on.

RANDY SMITH


Where are you taking this
one simple life?
Mass of indecision.
A different shade of the mistakes
I've made
Is scattered in the light.
leftover excuses
warm me in the winter,
and in the sun I
walk to the shade of doubt
for a Dream.
Where are the sounds that haunt
me to sleep?
Dreams in the day
don't speak or sing.
I simply carry them, the
half-child,
alive, staring from within the
undeveloped brain and
twisted body,
dependent on me.
I gave it life.
Where do all my answers go when I turn on the lights?
hidden under the bed, where it's still night.
And the Dream-child breast-feeds on my ambition
and leaves me dry.
For mercy, it would have
been spared long ago,
this unbelieving world.
But I would be alone.

Potential is probably the most absolute possibility in the world.

In a room where we should be,
there is Light enough for Principle.
Yet Achievement,
if indeed that is what we're striving for,
is a production process.
Faculty Follies-
our production.
Their show must go on,
so, lock the doors
and turn out the lights.

Creatitivity is nothing new.

> Intentions. Pretentions.
> Pre-tensions.
> A harem of ideas. Music in the back, nothing up front but harmless pleas.
> Please.
> Concessions.
> Digressions.
> Expressions of inappropriateness, and never complete Happiness.

```
I'M ONLY...
    and I'm only old enough
    to stand upon the bottom of the ladder
        and my shoulders are but rungs.
            I'm only wise enough for
        drinking fountain kings to test
        their destiny upon
        but my dreams float above their heads
        as clouds.
            I'm only, in the words
        of some remembered somebody
        yet i am the master of this pencil
        until I die or the lead
            breaks.
```



PERHAPS the most universal experience new architecture students have here is meeting Bertha Warford. She was the first one to flirt with me when I came, as she immediately spotted me as a new student. The feeling apparently comes back to her many fold.
"Students are super", she explains as a reason for stay-. ing despite the state's not so hot pay scale. Bertha feels as though the students treat her like a queen with their politeness and consideration- " It makes a point to life."

She and her husband live in Paoli (a 64 mile a day round trip for her) where he is principal, football coach, and a teacher for the high school. Their three sons are 27,23, and 19 and are all on their way in the world. Notice her desk and you will see the pictures of her two grandchildren aged 2 and 4.

Sales experience netted her the present job. Bertha works in conjunction with the bookstore in the Union and independently orders supplies. She has an assistant, Dave Clark, who works three hours each day while she takes inventory of her stock.

If a student desires something not in stock, she will do her best to get it, she says. On hand are catalogs from most of the major drafting and art equipment suppliers for ordering or just plain seeing what is available.
-Editi



How do you make soft, flowing shapes from angular, linear pieces? Soft shaped forms of dirt or foam or inflated plastic shapes can be used to mold concrete. However, it is difficult to make soft shaped forms either to mold concrete or as final products themselves out of linear and planar pieces.

The lamella cylindrical vault and the geodesic dome are notable approximations of curved surfaces with straight pieces. How do you do more? Both shapes can be manipulated into ellipsoids and egg shapes by changing the strut length derivation formulas. The result is a pleasing variation that setains symmetry.

I thought many more shapes would be possible if a computer were used to keep track of the strut lengths as the shape is manipulated with a graphic computer terminal. A shape displayed on a screen could be photographed or videotape recorded along with the appropriate strut lengths, strut junction load magnitudes, directions of the resultants, and spacial coordinates of the junctions. Thus a record would be made of all the significant shape variations a designer went through in a particular theme. For example, a standard program entry might be a geodesic 4 frequency strut dome of radius 1000 units. The strut lengths junction angles, and load conditions with standard materials would be known, along with the $X, Y$, and $Z$ coordinates of where the junctions are in space.

Many operations could be performed with the different graphic computer terminal tools available. The light pen is connected to the terminal and could be used to select a particular junction. A jo stick then could be used to manipulate that junction in space. The simplest operation (i) is that all of the points on a dome could be extended and moved around like a sea urchin's spines wave with passing water. Approximations of animal shapes (ii) and all sorts of wierd things could be made, still retaining a standard sperical or elliptical geodesic structure.

The joystick could also manipulate a conceptual net above the structure, the points of which are connected to the net cross line tie points.

(i)

(ii)

## Top Secret

Some more complex design methods follow:
I. Designing Process
A. Single skin

1. One point is selected and moved. The rest of the structure follows like a:
a. balloon where theoretical elastic tensions govern resistance to movement.
b. ice cream cone swirl where the moved point does not exert tension on the structure already laid. The weights of the newly laid pieces do, however. Either a dome can be extruded from above like an ice cream swirl or an intact one can have a spiral creased in it.

c. purely geometric proportional changes where the volumes and areas between struts remains in
(1) exact proportion to the original
(2) relative proportion, the junctions closer to the moved point being affected most.
2 Two or more points are selected with the structure following the point movements
a. equally
b. unequally
(1) Proportionally according to the distance the following points move from their original position.
(2) proportionally according to the distance the following points are from a selected point in space (not necessarily a point on the structure or round).
2. Struts are remaved and the structure is allowed to deflect as if it is caving in and then stopped.
a. When the surrounding struts reach a certain level of stress close to their design stress.
b. at a certain point and then shorter replacement struts are put in.
3. Struts are lengthened individually, or in sets equally or proportionate to some spacial, volumetric,
or importance criteria and
a. The structure follows according to internally determined strength needs or
b. Operator determined criteria such as affected area.
4. Windows are opened in the structure by
a. expanding an opening's surrounding struts according to the criteria in 4 , above,
b. removing struts and then doing the same.
5. Parts of the shape can be used separately.
6. Supporting pieces can be dropped from the shape to the ground according to

a. computer determined need
b. operator determined placement.
I.A.1.b.


Affected area

I.A.1.a.

I.A. 6.
B. Double skin.

1. Thickness of the skin can be increased at points of high stress
2. intersections of shapes can be more curvilinear than with a single skin.
C. Strut Shape (designed either beffore or after the structure is designed).
3. The design of struts as curvilinear pieces can be done with either stresses or esthetics determining the shape. A spherical connector is used, with smaller intersection angles needing a larger sphere.
a. One piece molded struts can have the mold separation lines computer determined
b. Several piece molded struts can have the junction edges go along the lines of least stress.
c. directionality of the laid up fibers can be determined along greatest stress lines.


I.A. $4 \& 5$.

I.A. 7.


II. Prefabrication process. A. Most economical use of standard construction materials.
4. Uniform cross section struts (wood beames, etc.) can be computer grouped to fit in the least number of pieces
5. Pieces of tensile or pneumatic fabrics can be designed with the first criteria of best structural integrity and second, the most economical fit on standard material sizes.
B. Variable shape mold
6. Spherical on one side (other side can be either spherical or flat, depending on the molded material's ability to hold a set)
7. Flat shapes from a mold made of steel channels laid on edge on a flat molding surface.
a. The pivot end of one is connected by gear to the free side of the next.
b. A counter attached to the geartrain acts as a caliper measure of the length of one side of the mold.
c. A hand wheel or electric motor could operate the changes.
8. Mole molds can be made using an inexpensive material such as styrofoam
a. It could work separately for laid up fiberglass or
b. With the female steel mold for injection or press molding.
c. Reinforcing bar or mesh is laid in the mold with an edge bar protruding, suitable for weld connections.

Same mould sides can be used for 4,5 , or however many facets with bevelling of the ends of the channels

closely spaced ball joints suspended from the ceiling


Pivot centerline falls on edge plane of channel $B$, is fixed to channel A

Distance from pivot end counter.

A. Erection

1. The length of steel cable to each of three points of the piece from a point above the center of gravity could be determined. A hand or elective motor operated device could be at this point.
2. The angle the piece should face in relation to north or the center of the structure can be set before the piece is hoisted or electrically operated to clear difficult passages.
3. The distance from each end point of a piece to a reference point could be checked before welding. The final adjustments could be made by an operator on the structure close to the fit by remote control if electric activation of cable lengths is used.
B. Finishing
4. Plastic caps could be used as molds for injected filler or legs on permanently.
5. Junctions can act as attachment points for hanging things.



Welding bars and threaded
rod welded
directional
control
III.A. $1 \& 2$.
$n$
Welding bars and threaded rod welded


There appears to be a very determined theif living off the Department-and mainly off Elton. The theif is equipped with a master key or a piece of celluloid and skill in its use opening locked doors. He (or she) used a hacksaw or boltcutter most recently to saw a padlock off a filing cabinet in Elton's office. This means that every office and stronghold is vulnerable.

I recommend security lockers be installed centrally in the school for safe deposit of valuable equipment and belongings. They could be rented by the semester and protected additionally by an alarm system which rings in the OUPD dispatch office.

Security lockers are a possible solution to a pressing problem. If our echool continues to be an easy target, we are keeping the burglary market going by being an easy target: A ready solution would be to lock up the building.
But wait a minute!!! Whoever it is can get in locked doors! I would appreciate seeing a solution attempt which does not lock out people who need to work here at nights and on weekends.

- Editar


## NEWS FLASH!

The stadium doors will be locked at 6:00 P.M. daily. Also all weekend. By vote of the faculty on November 14, 1973.
Double News Flash!!
And only facolty mombers will have keys! Perhaps some institution could use them as decoration, doll houses, or toys. Why not recycle our creative efforts?

- Editat
"Until our young people learn that their efforts in their own behalf can be decisive and important, they will continue to succumb to the debilitating effects of apathy and defeatism."

We produce a lot of good artwork and models here that get thrown away or forgotten. shown at 10:30 and 11:30 A.M. in the gallery on both days. For those of you who do enjoy the film series it will be
continued next semester.
You can get parallel curved
lines by putting lead in both sides of your compass. I found
it useful on a recent road lay-
out problem. - Editor our the official policy of our school is no dogs! They are nice but they shit on the floor, which the janitors have to clean up.
IF YOU WERE ON TRIAL FOR BEING AN ARCHITECTURE STUDENT, WOULD THERE BE ENOUGH EVIDENCE TO

RANDY SONTHEIMER recently was honored as the OUTSTANDING SENIOR from the College of Environmental Design.

The film series will be wrapped up for this year on November 21 and 22. On Tuesday the 2lst and Wednesday the 22nd, two good films are planned: "What is a Consulting Engineer?" and "No time for Ugliness." These movies are

## THINKER:

Ziscellaneous
CONVICT YOU? CONVICT YOU?

$$
-40
$$



ARE YOU WHO TERRARIUMS 8

BUY ONE FOR


* the scala has some 12 gal. CARBOY BOTTLES** LIKE
THE ONE IN MR. KEMPIS OFFICE.


ALL CLEANED UP

* the money goes to paying for the enviro-bus and telesis.
** BOTTEES ONLY (WHAT'D'YA EXPECT FOR *15?)


## GOT SOMETHNG TO SAY?



