BUILDINGS THAT HAVE LIFE.

" Are you a journalist? This place is just great! The best one I've ever been in."

No, I'm not a journalist but I am one of the people who helped create this building. The building is a shelter for the homeless in San Jose California, and this was a comment made by one of the residents there (seeing me, camera in hand). The Julian Street Inn as it is called is a recently completed project by Christopher Alexander and the Center for Environmental Structure. The project was ready for the first set of working drawings when I started working at the Center in early '87 and is nearing completion right at present.

I have been asked every so often, "What is so different about Chris Alexander's buildings? Is his way of working really all that different from the way most architects work?" I would say YES. It is different.

It is different because <u>the simple objective of wanting to create something that is truly beautiful (whole) is taken very seriously.</u>

When this is taken seriously, one has to realise that the way in which architects work either allows or does not allow that kind of beauty (wholeness) to evolve in the thing one is creating. There is something that feels right (and in keeping with the wholeness I am trying to create) when in making a chair, I make a rough version, look at it, use it for some time, add a little ornament or change it, until it is just perfect. There is something that feels wrong (and

does not allow wholeness to evolve) when I send off a drawing to a carpenter and the finished piece comes back, built exactly according to the drawing, at the most I check the colour or workmanship, I don't really like it very much but I dont know what to do about it or don't want to now that it is finished, so I just get on with the next thing.

The issue is usually as simple as that: what feels right? And how does one create something that has this feeling? I do not want to get into a discussion on the theoretical basis for such an approach here. It is something that has formed the core of Christopher Alexander's work for the past several years and is discussed at length in his forthcoming book The Nature of Order. What I do want to describe is the actual way in which work is done at the Center for Environmental Structure because it is essential to achieving the kind of quality present in buildings like the Julian Street Inn.

What happens at the start of a project? I will describe this process with respect to a school campus that we worked on in Pasadena, California. The first couple of months were spent in several conversations with the clients, the teachers at the school, visits to the school, sitting through classes etc. What was gradually drawn out of all this was a written description of what each space in the school should feel like. In some cases where it was very clear the description was fairly concrete, in some other cases what was described was a general feeling of light or colour that the place would have. Simultaneously, we had built a detailed model of the site with all the existing trees and structures, and keeping in mind the programme and the rough area requirements for it, we began to arrange very roughly cut wooden blocks, pieces of clay, paper, whatever was at hand to produce a layout with a glimmer of that feeling that had been described. A free-hand drawing was made based on the

model. It was important at this stage to maintain the roughness of the model even in the drawing.

The next step was to go down to the site and layout the structures using wooden stakes as markers. Decisions about the general location of different groups of buildings had been taken on the site model. On the site itself we were able to accurately locate each building and check it with respect to other structures next to it or trees that were to be retained, make sure that the spaces around the buildings had positive shape, make sure that the buildings and gardens that we proposed would enhance the inherent structure of the site and not damage it.
The points marked by the stakes on site were then transferred accurately to the drawing and the stakes hammered firmly into the ground such that they could not be disturbed by accident. After the same adjustments were made to the site model we could proceed with gradually building it up piece by piece to make the areas that we were certain about more firm.

At the same time we began to develop an idea of what materials and construction system would be used. The structural system (in spirit) and the actual feel of the materials used, their texture and colour, all contribute to the feeling of the place and could reinforce whatever we had achieved in the layout or destroy it.

The next time we went down to the site, we had a clear idea of the volume of each building, in some cases the internal ground plans and mock-ups of the wall section and materials. This time we were able to check the heights of the buildings and the volume of the spaces in between the buildings by using helium balcons attached to the stakes. In sum then, at each stage there was an attempt to get as close as possible to what the actual material or room or building would be,

<u>like and then proceed with the next step.</u> This is the only way (apart from designing while you build) in which a building can really evolve.

Let me describe another example. The tiles on the facade of the Julian street building. Initially the idea was to have a sort of checkerboard pattern of grey concrete and red terracotta tiles. The tiles were set into the concrete, not flush with the surface. This seemed too harsh it just did not have the right feeling. Several mock-ups were made with different variations - tiles flush with the concrete surface, mixed tones of terracotta tiles, terracotta mixed with tiles of another colour, terracotta tiles with a clear glaze - but it still was not right. The pattern was too seperate. All these experiments involved actually casting small four foot by six foot panels of concrete with the tiles set into the formwork before pouring the concrete, getting the right texture for the concrete surface by varying the forms and the concrete mix used etc. To have the ability (in terms of equipment, man power, space, etc) to do all these experiments was absolutely crucial. In many cases and in the case of these tiles in particular any other method of simulation like drawings or models or even computer modelling would not have allowed the kind of fine adjustments that were possible with these full scale mock-ups. We were able to actually transport the concrete panels to the site and look at them in that light - which in San Jose is particularly harsh - to see how the colours would be affected. There was no approximation involved.

What evolved gradually was a pattern in grey painted onto the red tile, this seemed like a breakthrough after months of not getting anywhere. The tile pattern was painted onto cardboard squares and the squares mounted on a concrete wall at a height of about twenty feet which would be the actual condition in which they would be seen. When viewed at this

distance, another pattern began to emerge - a pattern of octagons formed by the red portions of tile visible between the grey. This was beautiful but it still seemed a little flat. The problem was with the proportion of the grey pattern along the edges of the tile. The grey bands were reduced by one sixteenth of an inch on each side. (One sixteenth of an inch seen at a height of twenty feet and from a distance of another twenty feet sounds ridiculous, but the change in the proportion of grey to red on the whole wall was dramatic.) All of a sudden the wall seemed to shimmer as you looked at it. It felt right. This was it. We finally had the colour, the proportions, everything it seemed.

The tiles still had to be actually produced for use on the building. How was this to be done? Though there was a general contractor for the building, CES chose to take on the sub-contract for the tiles. <u>This was deliberately done in order to control the method of production of the tiles.</u> If at this stage we were to relax and have the tiles matched for colour and pattern and produced by another contractor we could very easily have destroyed the whole building. We still had some experiments to do.

The grey pattern had to be painted onto forty four hundered tiles without loosing that quality which came through so clearly on the mock-up. Also, speed was of the essence. We tried a few experiments: stencilled outlines and colour filled in, freehand outline and colour filled in, each of these done by one person alone or two people working as in an assembly line. Clearly the stencilled tiles felt very flat compared with the freehand ones, but even those were not quite there. The time taken for each tile was also too long. We had to average something like two minutes per tile. Finally what worked best was the pattern very quickly painted onto the tile directly with a brush. <u>Each tile on</u>

the building was painted by hand by a few of my colleagues at the center.

Each person at the Center for Environmental Structure has some basic construction skills. A person working on a project most often does every thing from mock-ups to models to drawings and sometimes construction on the building site. This is an essential part of the process "in which life emerges gradually during the process of making it, because the process allows a particular sequence of events to unfold correctly in the thing." Counter to normal practice, one has to be alert at each step to what is "out there" in the object or building or mock-up and recognise it because that is what is real. When several adjustments have been made on a model or a mock-up until it feels right one has to be very careful in transferring this to a drawing because if done carelessly or with any attempt to 'rationalise it, it could very easily loose much of the quality that might gradually have been achieved in the mock-up.

The truss for the dining hall of the Julian Street Inn was initially conceived of as a pre-cast concrete truss. The first drawing was made from a very rough sketch, but very carefully and accurately without changing the feeling of the sketch which meant being accurate not only about the dimensions and shape of the truss members but also about the shape of the spaces in between the members. The use of a finite element analysis program made it possible to check easily and quickly the stresses in the truss everytime even a minor change was made in its shape. To really get the dimensions of each member a full scale drawing of a thirty five foot by seventeen foot truss was made. A truss of one fifth of the actual size was cast (on a horizontal surface)in concrete and lifted to see where it would tend to crack in reality. (Pre-casting however, was finally given up and the trusses were gunited in place).

At one stage in the construction of the dining hall, a discrepancy was noticed in the slope of the gable walls of the structure and the slope of the truss. The gable walls had been completed and the contractors were unwilling to make any changes. Also, in deciding which of the two slopes to go by, there was the question of deciding which one would actually make the building better and which would harm it. To check this for ourselves and also to demonstrate it to the client and contractor, a full scale cardboard truss was made and positioned on the side walls of the building. It became clear that to change the shape of the truss would be disastrous. The shape of the gable walls was changed at CES's insistance and expense.

At each step in the evolution of a building or sometimes in order to make a decision the questions one has to ask are: Is this transformation (of the existing object or structure or site) "structure preserving"? Does each of the "centers" (in the system) act to reinforce the centers larger than itself and is it in turn reinforced by those that are smaller? I am sure that these questions can be understood intuitively even by those unfamiliar with the terms I have used. These terms have evolved from Christopher Alexander's theoretical works and writing. There was a need to develope such a language in order to get away from the narrow everyday usage of certain words and to be able to communicate (in the least cumbersome way) an understanding of the material world which is unfamiliar: An understanding based on human feeling.

The people at the Center for Environmental Structure are serious about creating things that are beautiful and have managed to create the kind of climate that will allow beauty to evolve - even in a hostile environment. This has meant having a radically different office structure, getting a

contractor's license, having the space and equipment for a workshop, and as far as possible doing the construction of their projects themselves. This kind of commitment has made it possible for CES to build projects like the Eishin School campus in Japan and the Shelter for the Homeless in San Jose. The dining hall at the Julian Street Inn, in Christopher Alexander's own words is "the best thing we've ever built". It is a building that has life.

EXCERPTS:

"...I have described a new theory of order, in which I try to show, explicitly and clearly, that some kinds of buildings have life and others don't and that we can distinguish the structure of these two and define clearly enough what life is, so that we can aim for it and try to make it. ...There are three main points that lie at the root of the life that can occur in something.

First, the existence of this life depends on the fact that every part of it reflects the "I".

Second the fact that the process which produces this thing, is an oriented process in which life emerges gradually during the process of making it, because the process allows a particular sequence of events to unfold correctly in the thing.

Third, unfortunately, the kind of process which is needed for life to unfold is unfamiliar in our time and often at odds with the deep structure of our present social processes - so that the effort of producing this life, though natural in many other periods of human history - appears as an immense struggle in our time.

The consequence - for anyone who considers that it is important to produce life - is that we must change the *processes* and the *assumptions behind the processes* deeply.

The fundamental idea in this changed understanding of matter is a conception of space in which the material substance of things is interpenetrating and contiguous with an all pervading "I". Thus the most fundamental motive of what is done within this view of things, is to increase as far as possible the "I" or self in anything we make.

What is developed then is a conception of the material world in which feeling lies at the heart. Human feeling is in this view not something isolated from scientific inquiry about the nature of matter as it has been in recent decades but is instead fundamentally connected to the nature of things.

Essential to this conception is a view in which feeling is not an ideosyncratic peculiarity of any one person. The depth of feeling which exists in a thing is not a matter of opinion ...but an essential thing that lies in the object.

.....that everything desirable in the environment can be summarized by means of one rule: The world is entirely made of wholes: each whole has the person-like character to the greatest possible degree. A building or work of art with

this character can only be made by a process which allows all its wholes to develope this character. .....we can only get this to happen by paying attention, all the time, to the *feeling* of what we are doing. It sounds easy, but it is very unusual. We are used to all kinds of other criteria. It is very difficult to have the mental discipline to keep on insisting that whatever we do at every single step must be governed by an evolving feeling which is getting better and more profound - and that we use this criterion not only for the obvious things which have feeling (like shape and light and view and colour) but also for the mundane things like plumbing and transportation and parking ramps.... and guard rails. This is the part that is hard. It is a revelation to realise that even the practical thinking that shapes a bit of engineering or a column-beam connection or a safety balustrade .....must also be governed by feeling.

Above all this process is dynamic. It is necessarily dynamic in its character. This means that the process is not one which tries to build a thing from a fixed blueprint defined ahead of time, but is a process in which what is being made (the blueprint) is itself evolving.

The single and essential character which forms the root of every one of these processes *is that we enjoy every act which is part of these processes.* That is really the meaning of personlike wholeness.