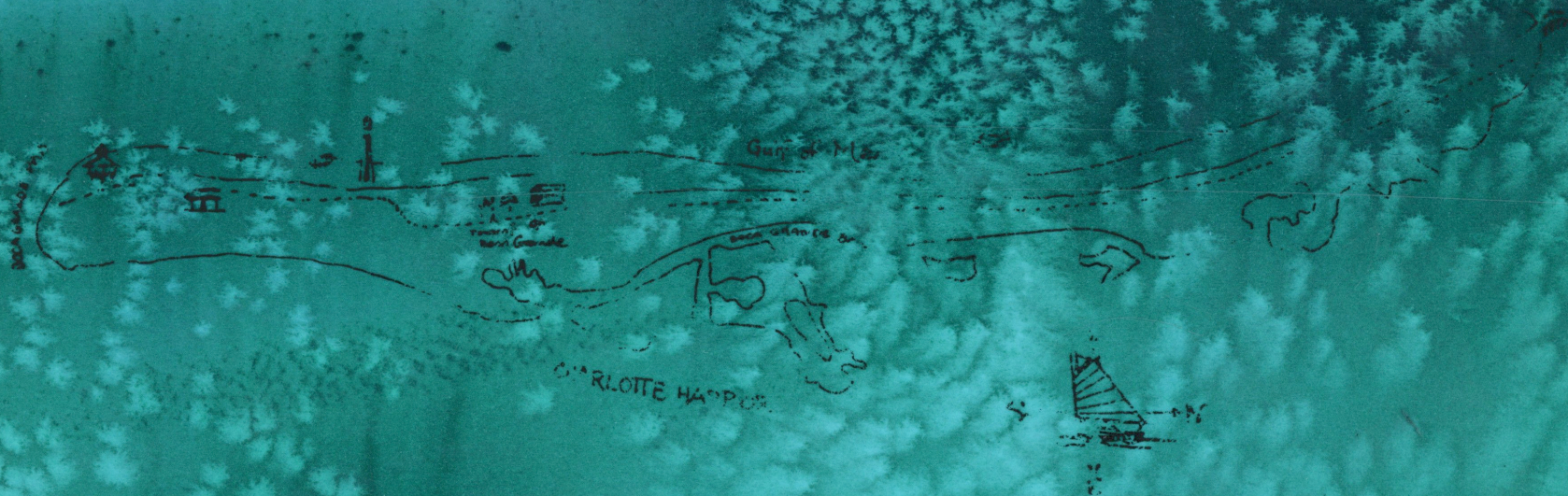




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BEGINNINGS**

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ARBITRARY BEGINNINGS

A CITY ON GASPARILLA ISLAND

by
Carlene E. Nolan-Pederson

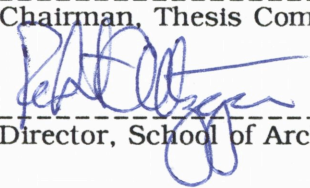
A professional paper submitted in partial fulfillment
of the requirements for the degree
of
Bachelor of Architecture

Approved:



Advisor

Chairman, Thesis Committee



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DEDICATION

I gladly dedicate this thesis to Professor Shee Kong who compelled me to reach for a higher level of creativity. I also thank Professor Ralph Johnson for his enthusiasm and guidance with my thesis. _____

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PREFACE

The thesis presented in this book is only an exploration of a design process which I will call the "*arbitrary beginning*." It is closely related to *simulacra* as defined and taught by Professor Chris Bergum at Montana State University. Whether or not *simulacra* has basis as an architectural design theory will not be validated here. I do not wish to advocate [plead the cause of another] the writings of Chris Bergum or Peter Eisenman; however, I do wish to implement a combination of the two in support of my own feelings and thoughts on the architectural design process.

The intent of this thesis is to explore creativity and the "breaking out of the code."

The definition of the "code" as it applies here is: a code made up of preprogrammed, preconceived, previously experienced components. The components are then chosen like building blocks and used as exemplifiers (to show or illustrate by example.)

I believe the process of creativity (defined here as making or bringing into existence something new) stumbles over and is often suffocated by the "code." In support of my views I will present the work of Arthur Koestler, who, in his book "*The Act of Creation*" investigates the creative process.

In different terms he presents an acceptance of an arbitrary beginning and an unexemplified thought process having no preconceived idea as to the appropriate image. His writings are to study and to understand the creative process. My attempt will be to push (or force) the creative process to the pre-conscious level.

This thesis will start with a diminutive program using only basic knowledge. This approach differs from Arthur Koestler, who believes the person must be saturated with all the information possible, which is similar to the usual architectural design process, and Chris Bergum, who believes no information about the problem is necessary before choosing an arbitrary beginning.

The known information will be site, size and time but will be unrestrained. The choice of these three being only my preference. The search for the arbitrary beginning will follow the unfettered program. I will examine several different media from which to choose the arbitrary beginning. These will include painting, machines, collage and sculpture.

ARBITRARY BEGINNINGS I

ARBITRARY BEGINNINGS

By Carlene Nolan-Pederson

"If we watch ourselves honestly we shall often find that we have begun to argue against a new idea even before it has been completely stated."

Arthur Koestler

ARBITRARY BEGINNINGS: PETER EISENMAN

Peter Eisenman in his article entitled "*The End of the Classical: the End of the Beginning, the End of the End*" states that architecture from the 15th Century to present has been under the influence of three "fictions." They are representation, reason and history. Representation was to embody the idea of meaning. Reason was to codify the idea of truth. History was to recover the idea of timeless from the idea of change. Because of the persistence of these three categories over this period of time, Eisenman recognizes a continuous mode of thought and refers to it as "the classical." Michael Foucault's term (in *The Order of Things*) was "episteme" - a continuous period of knowledge that included the early 20th Century.¹

Eisenman suggests that the three fictions have never been questioned and so remain intact. Architecture since the mid-15th Century is a paradigm (an archetype) of the classic which means an original model from which copies are made. An architecture which attempts to recover that which is classic can be called "classical."²

The Fiction of Representation: the simulation of meaning

Eisenman writes that before the Renaissance language and object had a direct relationship. Truth and meaning were self-evident. If a man had an apple and asked another man "do you want the apple?" the second man saw "an apple," knew how it looked, felt, tasted and what to do with it. There were no plastic apples, rubber apples, etc. to confuse the meaning - no *simulation*. Also the meaning of Romanesque or Gothic cathedral was in itself: it was *de facto* : REALITY, ACTUALITY. He concludes that Renaissance building and all buildings after pretended to be architecture - their value was from an already valued architecture; and so the first simulacra.³

The Fiction of Reason: the simulation of truth

Eisenman claims the crisis of belief in reason eventually undermined the power of self-evidence. This was most evident in the areas of science and language. As science developed it discovered that accepted truths were actually not the reality. In the case of language words grew to have different meaning than the first, original meaning. As reason began to turn on itself, to question its own status, its authority to convey truth and its power to prove began to evaporate. What both the Renaissance and the Modern relied on as the basis of truth was found to require, in essence, *faith*. He says there is no architectural image of reason, there is, however, a need for verification. The message of the past was used to verify the meaning of the present.⁴

The Fiction of History: the simulation of the timeless

Prior to the mid-15th Century there was no concept of the forward movement of time. No reason for change for the sake of change. No past, present or future.

During the mid-15th Century the change occurred with the idea of "temporal origin" - of or relating to time as opposed to eternity. This consciousness of time's forward movement gave birth to the idea of a process of historical change.⁵ It also gave birth to the notion of the zeitgeist (the general intellectual, moral and cultural climate of an era.) It became necessary to identify what style of architecture was expressive of a certain time period.⁶

Eisenman believes that the modern architecture movement falls into the classical here because it dealt with the zeitgeist rather than doing away with history. It became only a new episode in the classical, a simulation of the timeless through a replication of the timeful (history.)⁷

He explains that fiction becomes simulation when it does not recognize its condition as fiction. Dictionary definition of fiction: something invented by the imagination. Dictionary definition of simulation: imitation of a particular appearance or form: counterfeit.

An excessive concentration of inventive energy has been spent on the representational object. Architectural elements become representational when columns are looked at as substitutes for trees and windows resemble the portholes of ships. His stand is that architectural figures always allude to - aim at the representation of - some other object.⁸

Eisenman's position is that modern architecture claimed architecture was solely to embody its own function. It believed that form followed function and that a building should express and look like its function. The modernists attempted to divorce themselves from the classical. The process was called "abstraction." Eisenman maintains that the Modern Movement can be seen as continuous with the architecture that preceded it. Modern architecture, according to him, failed to employ a new value in itself. The Moderns tried for objectivity but their forms never left the classical tradition, merely stripped down classical forms.⁹

The Modern movement believes architecture should be a reflection of its zeitgeist. Eisenman contends there can be an architecture that does not consider its purpose to reflect these values. He proposes an expansion beyond the limitations presented by the classical model to the realization of architecture as an independent discourse, free of external values - the intersection of the MEANING-FREE, the ARBITRARY and the TIMELESS. A "not classical" architecture is no longer a certification of experience or a simulation of history, reason or reality in the present. It is an "OTHER" architecture, an architecture "as is," a fiction. It is a representation of itself, of its own values and internal experience.¹⁰ My hope is to add to Eisenman's list an architecture with its own external experience.

It is possible to imagine a beginning internally consistent but not conditioned by or contingent on historic origins with supposedly self-evident values. Thus, while classical origins were thought to have their source in a divine or natural order and modern origins were held to derive their value from deductive reason, "not-classical" origins can be strictly arbitrary, simply starting points, without value. Such artificially determined beginnings can be free of universal values because they are merely arbitrary points in time, at the commencement of the architectural process.¹¹

Eisenman suggests that this "invented" origin from which the process receives its motivation differs from the accepted origins of the classicists by being arbitrary, reinvented for each circumstance, adopted for the moment and not forever. Here architectural form can be revealed as a "place of invention" as Eisenman terms it and not a subservient representation of another architecture.¹²

This "as is" architecture encourages a new kind of reading from the person experiencing it - a reader who brings no preconceptions of what architecture should be (in terms of its proportions, textures, scale, etc.) A reader who does not decode architecture.¹³

ARBITRARY BEGINNINGS: JEAN BAUDRILLARD

To discuss Chris Bergum's* thoughts on simulacrum I must present the ideas of Jean Baudrillard in his book *Simulations* because I believe them to be one and the same.

Baudrillard begins with the example of a map and a desert. At the beginning of time, before the mid-15th Century there existed a desert. A being made a map of the desert, a mirror image, a simulation. It was a generation of a model from the reality, the origin. The desert engendered the map. Today we generate models (whether architectural or in other fields like science) and proceed to make reality out of the created model. This proposes the idea of which is real. The desert was real, the map was simulation. Is the model real and the built form of today a simulation? A generation by models of a real without origin or reality can be called a HYPERREAL. Definition of hyper is over, above and beyond.

* Chris Bergum is a professor of architecture at Montana State University.

Baudrillard says the real is produced from miniaturized units, from matrices,** memory banks and command models ("the code") and with these it can be reproduced an indefinite number of times. [The use of the word "it" here means the reality, result.] It no longer has to be rational, since it is no longer measured against some ideal or negative instance. It is nothing more than operational. This is in agreement with Eisenman's "as is" architecture. It is a product of an irradiating synthesis of combinatory models ("the code") in a hyperspace without atmosphere. A HYPERREAL.¹⁴

I'll question for the sake of argument, is this "real" (result) actually the reality? To clarify, I will use architecture as the example - we create a building first by drawings, second in model form and third in the built form. Now, think back to the map and the desert. The desert was *real* and engendered the map, *the simulation*. So are the drawings *real* and they then engender the building, *the simulation*?

Simulation threatens the difference between "true and false," between "real and imaginary." Baudrillard gave the following example as explanation. To dissimulate is to feign not to have what one has, to hide under a false appearance. To simulate is to feign to have what one hasn't, to assume the outward qualities or appearance of. One implies a presence, the other an absence. But the matter is more complicated, since to simulate is not simply to feign: someone who feigns an illness can simply go to bed and make believe he is ill. Someone who simulates an illness produces in himself some of the symptoms not recognizing if it's fiction or simulation. Since the simulator produces "true" symptoms, is he ill or not?¹⁵

**something within which something else originates or develops.

Now, I want you to go back to the building previously referred to, is it fiction, simulation or reality? I believe, like the example of the ill person, it has passed from fiction to simulation and on to reality as a functional, experienced building.

Jean Baudrillard gives what he calls the successive phases of the image:

- it is the reflection of a basic reality;
- it masks and perverts a basic reality;
- it masks the absence of a basic reality;
- it bears no relation to any reality whatever; it is its own pure simulacrum.¹⁶

He then breaks down simulacra (plural of simulacrum) into three orders. The first order of simulacrum is COUNTERFEIT and the dominant scheme of the "classical" period from the Renaissance to the Industrial Revolution. The second order is PRODUCTION which was the dominant scheme of the Industrial Era. The third order is SIMULATION, the predominate scheme of the current phase that is controlled by "the code."¹⁷

COUNTERFEIT was born with the Renaissance with the destructuring of the feudal order and the emergence of open competition.¹⁸

PRODUCTION was born with the Industrial Revolution. Signs will no longer have to be counterfeited since they are going to be produced all at once on a gigantic scale. The problem of their uniqueness, or their origin is technique. With two or "n" identifiable objects the relation between them is no longer that of an original to its counterfeit - neither analogy nor reflection - but equivalence and indifference. In a series objects become undefined simulacra, one of the other. Production can be seen as an absorption of all original being and of introduction to a series of identical beings.¹⁹

As soon as dead work wins out over living work; that is, as soon as the era of primitive accumulation is over, serial production yields to generation by means of models. Here lies the question of origin and finality, for all the forms change once they are not so much mechanically reproduced but even *conceived* from the point of view of their very reproducibility. Here we are in the third order of simulacra - SIMULATION - diffracted from a generating nucleus we call the model. Nothing flows any longer according to its end, but proceeds from the model, the "signifier of reference."²⁰

Every image, every media message, but also any functional environmental object, is a test - that is to say, in the full rigor of the term, liberating (freeing from domination) the response mechanisms according to stereotypes and analytic models.²¹ Simulations operation is nuclear and genetic and no longer specular and discursive.

nuclear - of or relating to a nucleus, being propelled by or produced by

genetic - relating to or determined by the origin, development, prior

history, or causal antecedents of some phenomenon.

specular - seen as if through a glass or mirror, reflected

discursive - preceding logically or coherently from topic to topic,

reasoning from premises to conclusions.

Chris Bergum teaches the THREE ORDERS OF SIMULACRA in his design studio with the following definitions:

First Order - "CLASSICAL" - counterfeit, representation of an object in its purest form. Applies in design as gathering images, (pictures in mind) and making similar.

Second Order - "PRODUCTION" - industrial era design application - form follows function. Study program and function with use of bubble diagram. Here image follows program.

Third Order - "SIMULACRA" - from an arbitrary beginning. Is not program or image. The beginnings can be machine parts, painting, collage or whatever. We then turn his information into an "OTHER" architecture.

Professor Bergum has his students find the arbitrary beginning first. No program has been given to the class. They are then asked to turn the painting, music or whatever into a plan section. Second, they make a three dimensional model by expanding their plan section. The next step is to construct an axonometric drawing of the model. The drawing is developed from the plan; it is an extension of the plan in three-dimensionality. Similarly, an axonometric is not a model, nor is it truly three-dimensional but rather, it is a "representation" of that model and three dimensionality. After drawing the standard axonometric, then do overlays cut sectionally into the construction. Do this several times at different levels to a degree that the final product, a section-axonometric can be "read" in several ways simultaneously. In this sense the medium of two dimensionality has intersected with the media of three dimensionality. Last, the students construct a plan section drawing based on the axonometric. Bergum states as your axonometric was developed from the model, it does not double or become a mirror of the model. Instead, non-affirmative representation leads it to affirm its inherent two-dimensionality. In this sense it has become its own HYPERREALITY. The task is to translate this hyperreality into a new reality.

DEFINITIONS

As a basis one needs to understand simulacrum by a thorough examination of the word.

SIMULACRUM: 1. A representation of something: IMAGE, EFFIGY.
2 a. Something having the form but not the substance of
a material object: IMITATION, SHAM.
b. A superficial likeness: APPEARANCE, SEMBLANCE.
syn. IMPOSTURE, COUNTERFEIT, SHAM
plural: simulacra or simulacrums

IMPOSTURE: The act or practice of imposing on or deceiving someone
by means of an assumed character or name, a thing made
to seem other than it is, object is passed off as genuine.

IMPOSE: 1. To bring into being, CREATE, GENERATE
2. To deceive or encroach on

The synonyms for IMPOSTURE are:

COUNTERFEIT - applies to a close imitation or copy of a thing

SHAM - imitates or purports to be a genuine reality

SIMULACRUM - indicates an image or imitation but usually
lacks the suggestion that it is made to defraud; it may
indicate an image utterly wanting in essential substance
reality, something whose essence was not there at all,
a stiff lifeless simulacrum.

[From Webster's Third New International Dictionary,
G & C Merriam Co. publishers, Springfield,

Mass. 1966]

CREATIVITY AND THE DESIGN PROCESS

I believe the "ARBITRARY BEGINNING" enhances creativity. It places the designer in a foreign, unfamiliar dimension. Here he can no longer depend on "the code."* His mind is freed from all preconceptions and inhibitions - anything goes! Some designers are very uncomfortable with this freedom and some never experience the freedom. Creativity in this extreme dimension means criticism. The familiar building blocks of the code are no longer enough, now the mind must push outward, explore new building blocks which are used only for the moment, the specific instance. Here, two dimensionality must be seen as three dimensional.

At this point I wish to present a short summary of the ideas and work of Arthur Koestler, who upon reading helped me put into perspective and words the thoughts and ideas trapped in my mind. The subject is the creative process. I present his views in support of my own belief in the "arbitrary beginning."

*code" as defined in the Preface.

I will begin with Mr. Koestler's summary as written in his Book One:

"THE ACT OF CREATION" - ARTHUR KOESTLER

"When life presents us with a problem it will be attacked in accordance with the code of rules which enable us to deal with similar problems in the past. These rules of the game range from manipulating sticks to operating with ideas, verbal concepts, visual forms, mathematical entities. When the same task is encountered under relatively unchanging conditions in a monotonous environment, the responses will be stereotyped, flexible skills will degenerate into rigid patterns, and the person will more and more resemble an automation, governed by fixed habits, whose actions and ideas move in narrow grooves. He may be compared to an engine-driver who must drive his train along fixed rails according to a fixed timetable.

"Vice versa, a changing, variable environment will tend to create flexible behavior-patterns with a high degree of adaptability to circumstances-the driver of a motor car has more degrees of freedom than the engine-driver. But novelty can be carried to a point-by life or in the laboratory-where the situation still resembles in some respects other situations encountered in the past, yet contains new features or complexities which make it impossible to solve the problem by the same rules of the game which were applied to those past situations. When this happens we say that the situation is blocked-though the subject may realize this fact only after a series of hopeless tries, or never at all.

"A blocked situation increases the stress. When all hopeful attempts at solving the problem by traditional methods have been exhausted, thought runs around in circles in the blocked matrix like rats in a cage. Next, the matrix of organized, purposeful behavior itself seems to go to pieces, and random trials make their appearance, accompanied by tantrums and attacks of despair-or by the distracted absent-mindedness of the creative obsession. That absent-mindedness is, of course, in fact single-mindedness; for at this stage-the period of incubation-the whole personality, down to the un verbalized and unconscious layers, has been saturated with the problem, so that on some level of the mind it remains active, even while attention is occupied in a quite different field, ...until either chance or intuition provides a link to a quite different matrix, which bears down vertically, so to speak, on the problem blocked in its old horizontal context, and the two previously separate matrices fuse. But for that fusion to take place a condition must be fulfilled which I called "ripeness." * However, ripeness is merely a necessary, not a sufficient, condition of discovery.

"This leads to the paradox that the more original a discovery the more obvious it seems afterwards. The creative act is not an act of creation in the sense of the Old Testament. It does not create something out of nothing; it uncovers, selects, reshuffles, combines, synthesizes already existing facts, ideas, faculties, skills."²²

*"ripeness"-the statistical probability for a relevant discovery to be made is greater the more firmly established and well exercised each of the still separate skills, or thought-matrices are.

Koestler starts with an example of a chimpanzee who when he cannot reach the banana outside the cage takes the stick he is playing with and pulls the banana closer using the stick as a rake. In this experiment this was not a previously learned experience. The two matrices are the banana as food and the stick as a toy to play. The problem of how to get the banana caused the two previously separate matrices to fuse into one-"the stick to play" became "the rake to reach with."²³ The learned experience is then filed in the memory and becomes part of the "code."

The above situation can, of course, be applied to humans. Discovery often means simply the uncovering of something which has always been there but was hidden from the eye by the blinkers of habit.²⁴

The mastery of the code and stability of environment are the two factors which lead to the formation of habit; and habit-formation is accompanied by a gradual dimming and darkening of the lights of awareness.²⁵

The greater mastery and ease we gain in the exercise of a skill (habit), the more automatized it will become because the code of rules which controls it now operates below the threshold of awareness, the unconscious.²⁶ To illustrate Koestler's meaning I'll give you the following example. You have experienced being aware that you just drove to work for the "nth" time and upon arriving realize you did not pay attention (consciously) to the trip. You cannot remember if the light was red or green or if you stopped. The trip has become "coded," the actions along the way automated, falling into the realm of the unconscious.

Koestler states problem solving is bridging the gap between the initial situation and the target, as with the chimp and the banana. First "the code of rules" appropriate to the task is tuned in-by analogy with similar tasks encountered in the past. As a result, a *matrix* will emerge, *a kind of patterned mental grid or chess board, which provides a preliminary selection of permissible moves.*²⁷

As a task becomes more complicated, the code of rules which enabled us to contend with similar previous tasks proves insufficient for the new problem.

Koestler says when a situation is blocked, straight thinking must be superseded by "thinking aside" - the search for a new auxiliary matrix which will unblock it.²⁸

At this decisive stage of discovery the codes of disciplined reasoning are suspended-as they are in a dream, a reverie,* the manic flight of thought, the pre-conscious. When in this mode of creative thought-like dreaming we do not realize any incompatibilities; there is no awareness of conflict and incongruity; that comes only on awakening²⁹

Koestler has formulated the Eureka Act:

The temporary relinquishing of conscious controls liberates the mind from certain constraints which are necessary to maintain the disciplined routines of thoughts but may become an impediment to the creative leap; at the same time other types of ideation* or more primitive levels of mental organization are brought into activity. ³⁰

*reverie-the condition of being lost in thought.

*ideation-the capacity for the act of forming or entertaining ideas.

By this Koestler means the more primitive "thinking in pictures" as he refers to it and the discarding of language and words. He further explains words are essential tools for formulating and communicating thoughts and also for putting down into the storage of memory; but words can also become snares, decoys, or straight jackets.

In synopsis, the act of discovery has a disruptive and a constructive aspect. It may disrupt rigid patterns of mental organization to achieve the new synthesis. The habitual way of looking at a problem has to be shattered. Also any new experience or discovery once learned must be remembered and is then "coded."³¹ When two matrices have become integrated they cannot again be torn asunder. This is why the discoveries of yesterday are the common places of today.³²

The arbitrary beginning is the second matrix with which a designer can work. I speak here with architectural design in mind but the process is applicable to all creativity. Elements, components or units of "the code" are hung on a tunnel wall. To solve the problem we walk through the tunnel to search for and pluck off the components that we consciously know will solve the problem. Upon selecting the components we then arrange them artistically to put together new solutions, new combinations. But here, remember, they are new combinations of old components, not the combining of old components with a new entity. At which point enters the arbitrary beginning, the second matrix.

Now imagine going down the same tunnel-we busily pluck off the components from the wall. But these components are hanging on walls of wire mesh that we can see through. One of two things can happen on our trip. First, as we pluck and gather we saturate ourselves with the known components, or learned answers, and knowledge of the problem as we go. Somewhere down the path of the tunnel we lose concentration (maybe because of the habit or automation theory) and we glimpse something completely unconnected to our problem. We realize it is the second matrix, the inspiration. At this point we experience a rush of excitement-something new stimulates us and adds to our creative process. We then try to synthesize the two matrices. The result maybe fruitful or we may have to walk down the tunnel again. I believe as we repeat the experience we would learn also to choose the correct arbitrary

beginning with more ease. One other thing that can happen on our trip is that at the end of the tunnel we realize we cannot solve the problem or are not inspired by the combination of components. Now we are stuck, at a standstill. Time passes and we are not consciously thinking of the problem but are consciously thinking about something else. We see a connection like a ray of light and are inspired again. This may, however, take quite some time which may be days or years, not always satisfactory.

There is one other alternative to the above-mentioned experiences. We may choose to purposefully look for an arbitrary beginning, setting "the code" aside and not heading for the tunnel. This can be done in some instances with absolutely no prior information as to the problem, very little information or a saturated degree of knowledge about the problem. I believe it becomes more difficult, however, to pick an arbitrary beginning the more knowledge one has of the problem. The more we know the more we may have difficulty with "the code" interferring with our choices.

I do not mean to imply that once a designer starts with an arbitrary beginning he completely throws out "the code." Different designers have varying degrees of success at letting go of the code. To completely erase the code from one's mind would be the ultimate goal. Peter Eisenman's "OTHER" architecture could then spring forth and, hopefully, be read without being "decoded."

The arbitrary beginning will be the creative process I will choose for my thesis. I plan to find and then consider three alternative choices from paintings, machines, collage, sculpture or music. I hope the architecture will be more interesting, stimulate curiosity, have complexity and be an architecture of "itself," built for that *particular* time, place and need.

FOOTNOTES

¹Eisenman, Peter, *The End of the Classical, the End of the Beginning, the End of the End*, Montana State Architectural Review, Volume III, Montana State University, 1985, p. 2.

²*Ibid*, p. 2.

³*Ibid*, p. 2.

⁴ *Ibid*, p. 2.

⁵ *Ibid*, p. 4.

⁶ *Ibid*, p. 5.

⁷ *Ibid*, p. 5.

⁸ *Ibid*, p. 6.

⁹ *Ibid*, p. 2.

¹⁰ *Ibid*, p. 6.

¹¹ *Ibid*, p. 7.

¹² *Ibid*, p. 8.

¹³ *Ibid*, p. 9.

¹⁴ Baudrillard, Jean, *Simulations*, Semiotext(e) Inc., Columbia University, N.Y., N.Y., 1983, p. 3.

¹⁵ *Ibid*, p. 5.

¹⁶ *Ibid*, p. 11.

¹⁷ *Ibid*, p. 83.

¹⁸ *Ibid*, p. 84.

¹⁹ *Ibid*, p. 97.

²⁰ *Ibid*, p. 101.

²¹ *Ibid*, p. 120.

²² Koestler, Arthur, *The Act of Creation*, MacMillan Company, N.Y., N.Y., 1967, pp. 118, 119, 120.

²³ *Ibid*, p. 102.

²⁴ *Ibid*, p. 108.

²⁵ *Ibid*, p. 155.

²⁶ *Ibid*, p. 155.

²⁷ *Ibid*, p. 163.

²⁸ *Ibid*, p. 163.

²⁹ *Ibid*, p. 178.

³⁰ *Ibid*, p. 169.

³¹ *Ibid*, p. 104.

³² *Ibid*, p. 105.

**EXAMPLES OF DESIGN PROCESSES
USING ARBITRARY BEGINNINGS**

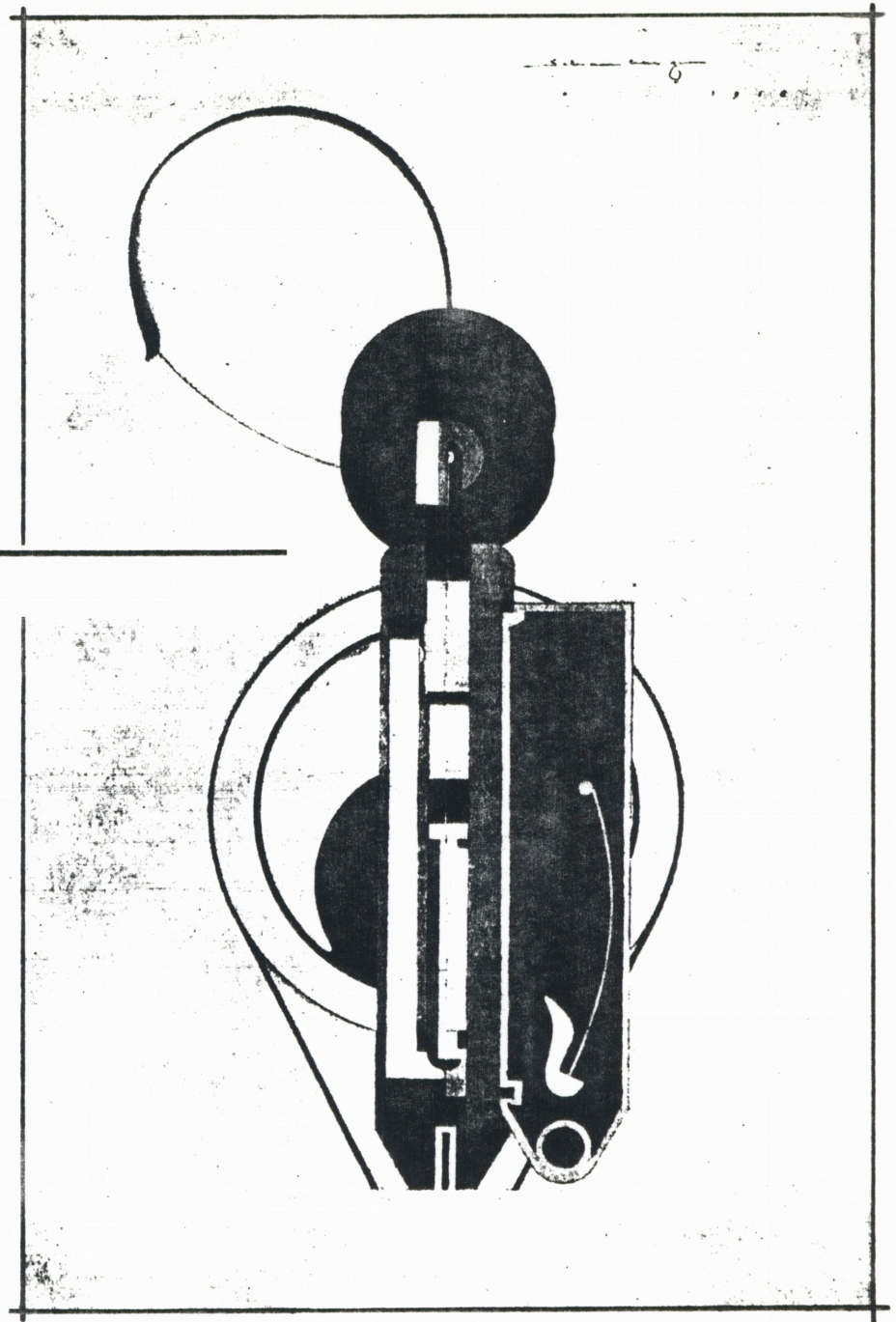
precession of Cubist Simulaca

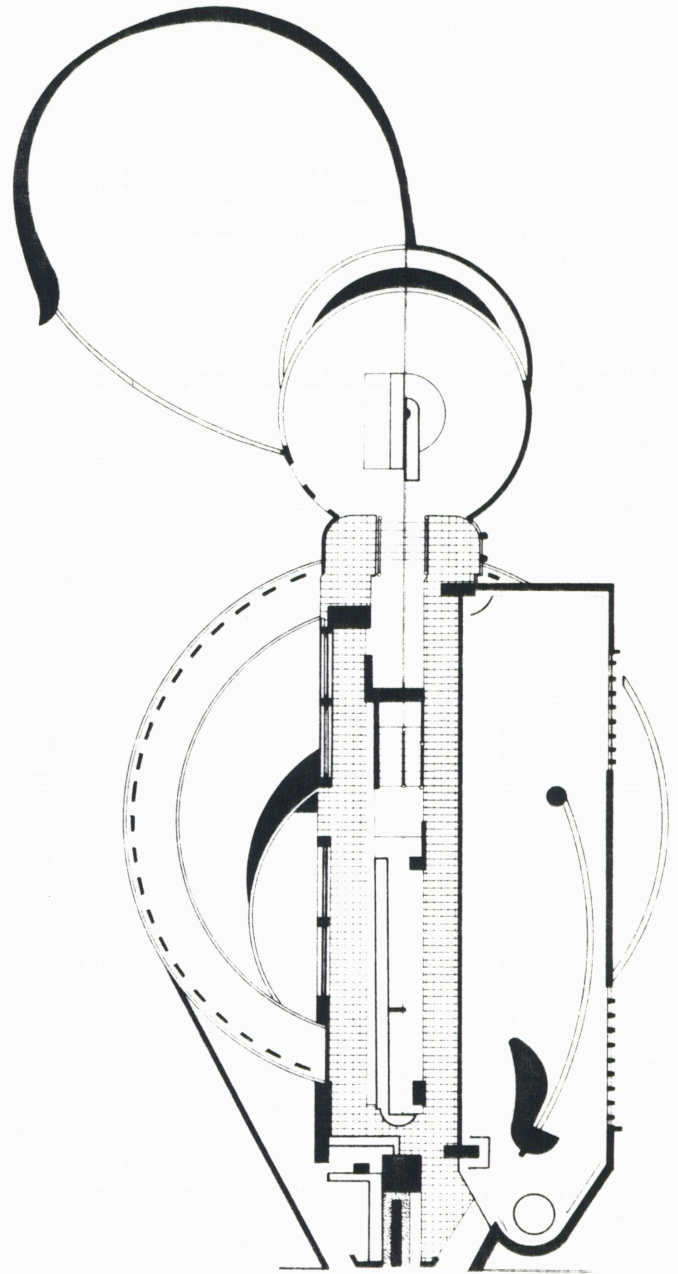
**PROFESSOR BERGUM DESIGN STUDIO-
STUDENT DENNIS DEPPMEIER**

EXERCISE 1. Selection of arbitrary beginning

SCHAMBERG: *Abstraction*, 1916.

Oil, 30 x 20 1/4". Louise and Walter Arensberg Collection

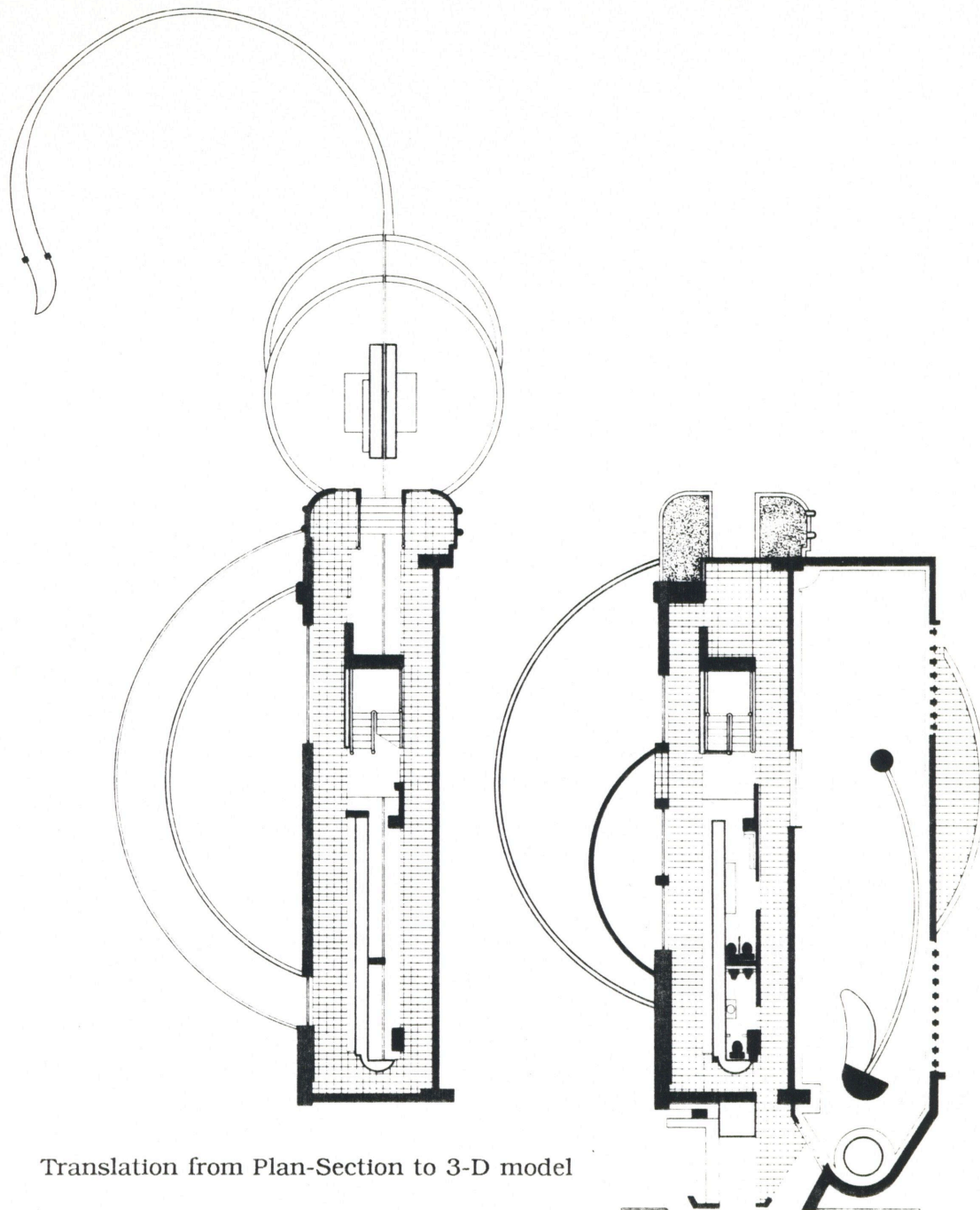




Painting becomes plan

EXAMPLES

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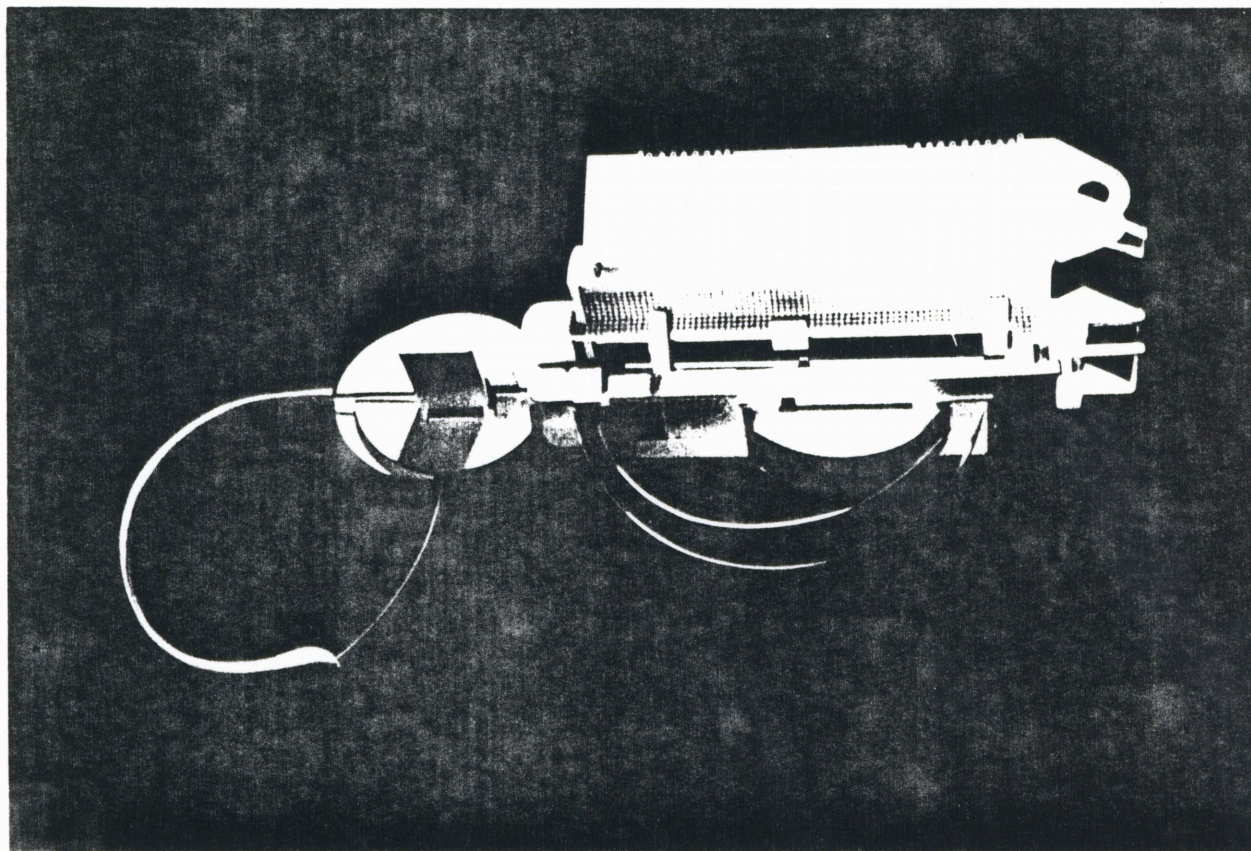
EXERCISE 2

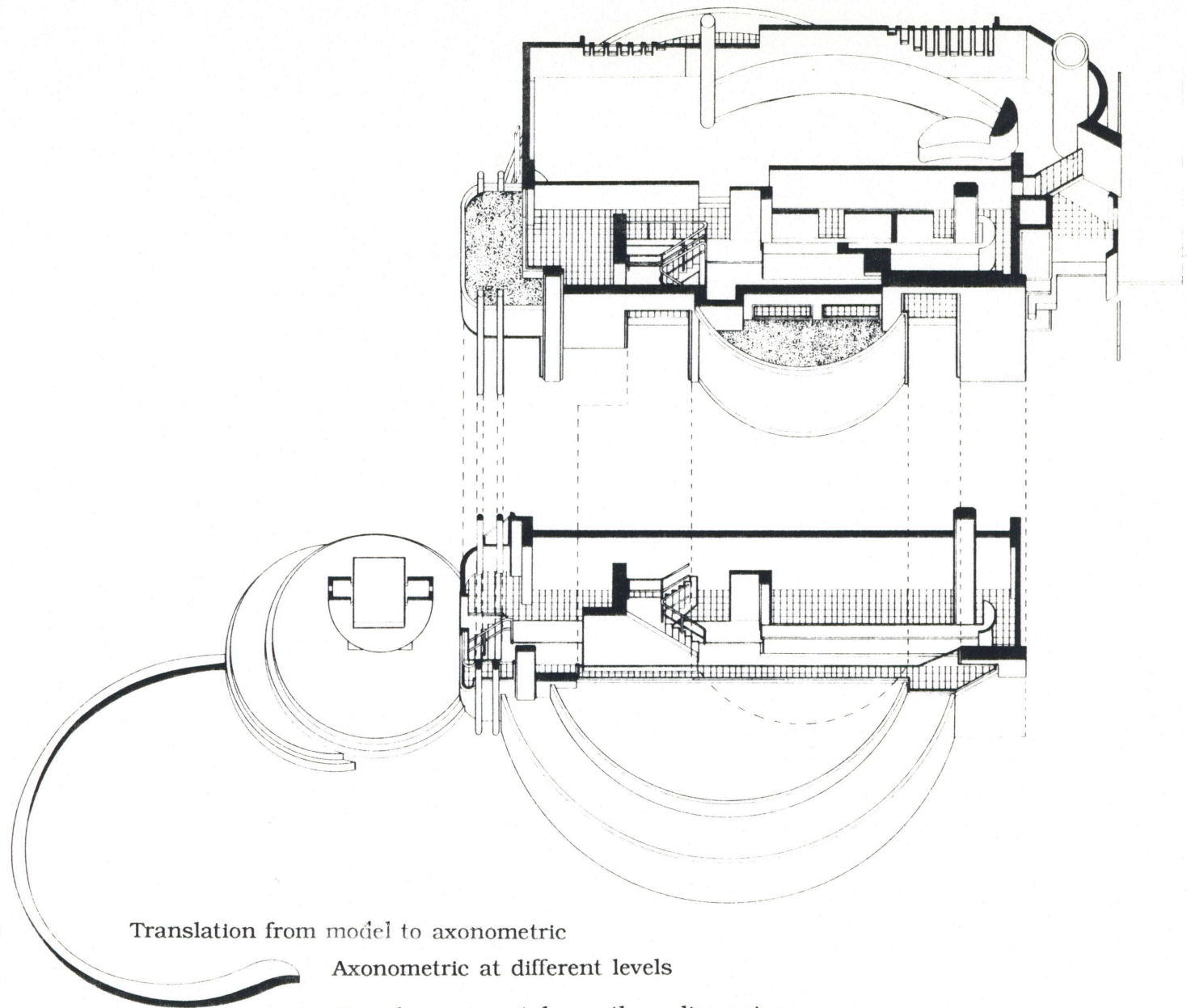
Translation from Plan-Section to 3-D model

EXAMPLES

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Photograph of model



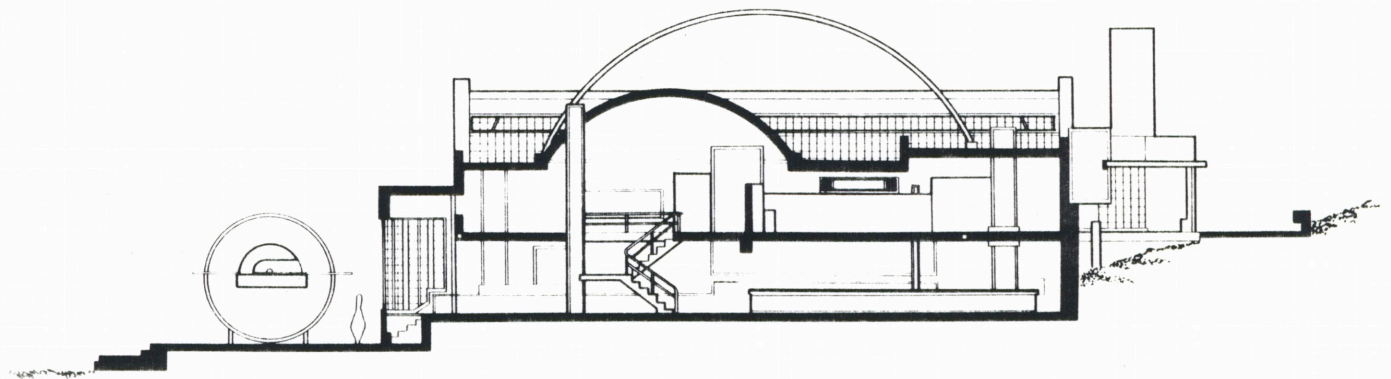
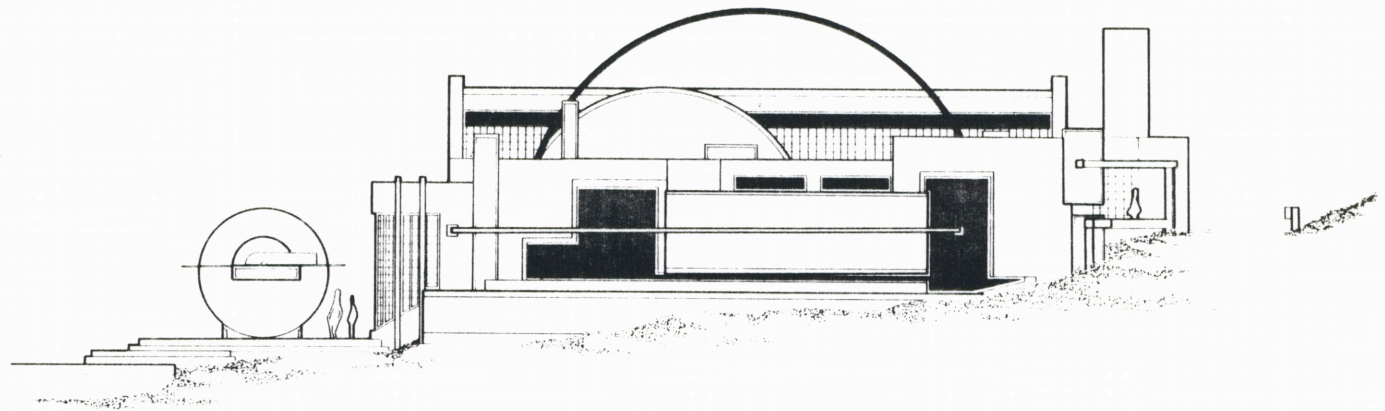


EXERCISE 3

Translation from model to axonometric

Axonometric at different levels

Two dimensions take on three dimensions



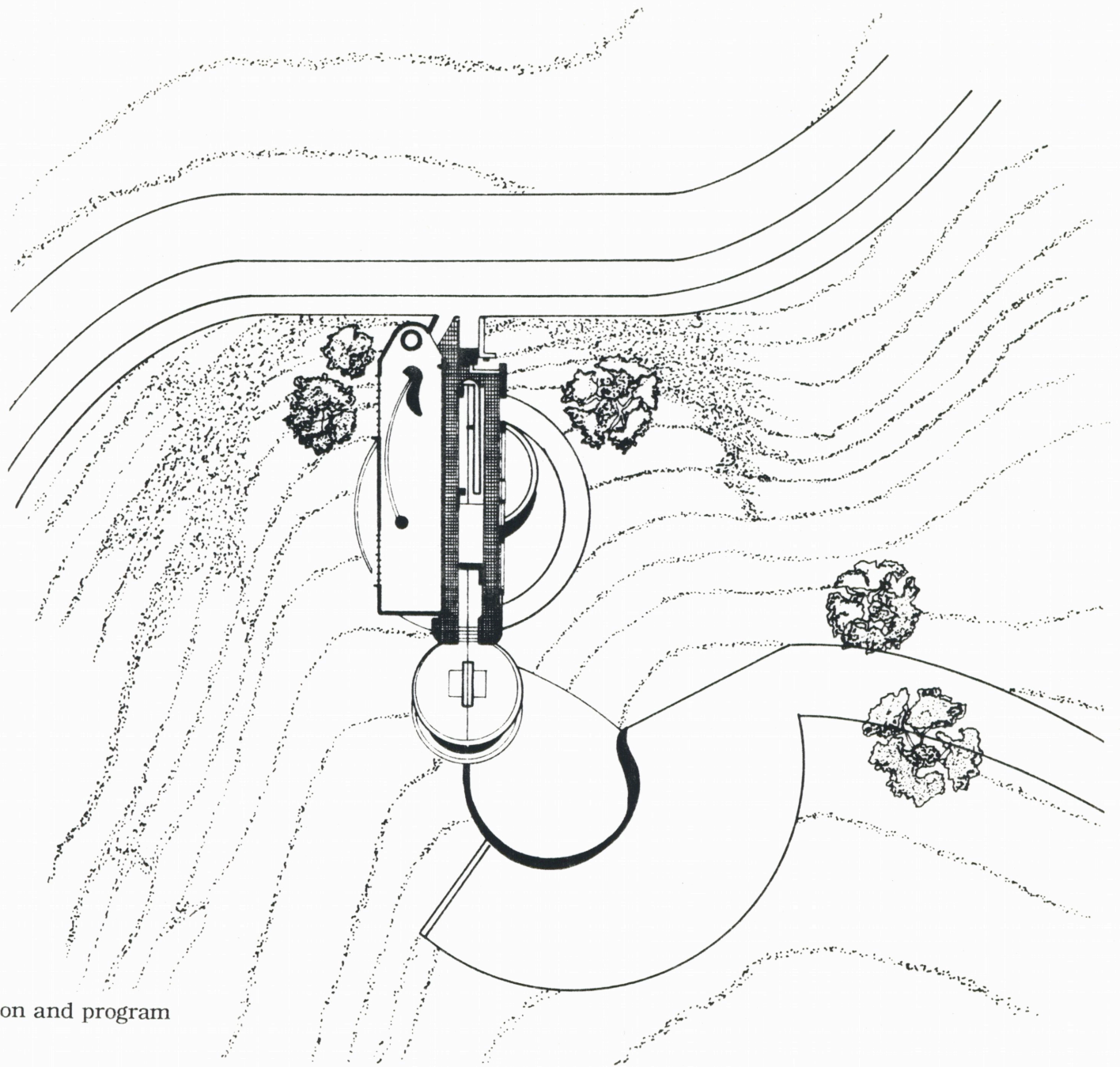
EXERCISE 4

Translation from hyper-reality to reality

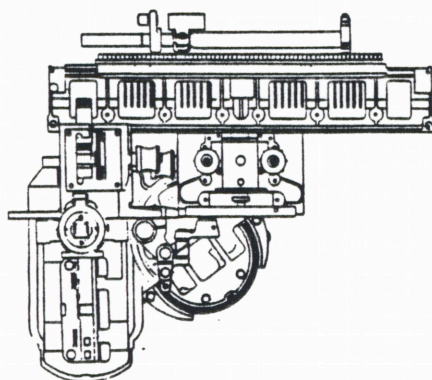
EXAMPLES

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Fit function and program
Fit site



PROFESSOR KONG DESIGN STUDIO-
STUDENT CARLENE NOLAN-PEDERSON



SIMULACRUM
THE MACHINE
THE PROCESS

THEORY: MACHINE PARTS

Professor Shee Kong's argument for the use of machines in Architectural design:

The machine is a product of mankind.

The machine is three dimensional - it occupies space and time.

The machine has inherent order.

The machine is organized from being to end - entry to exit.

The machine is totally interrelated.

The machine often must be dissected and studied to be understood.

The machine is generally for the benefit of mankind.

The machine responds to functional needs.

The machine may be a reflection of both our technology and culture.

"Don't you see the relationship between architecture and the machine?"

STUDIO SEQUENCE: METAMORPHOSIS

Select a machine and disassemble it.

Select interesting pieces and draw (exactly - no abstraction.)

Collage drawn parts together in two different patterns.

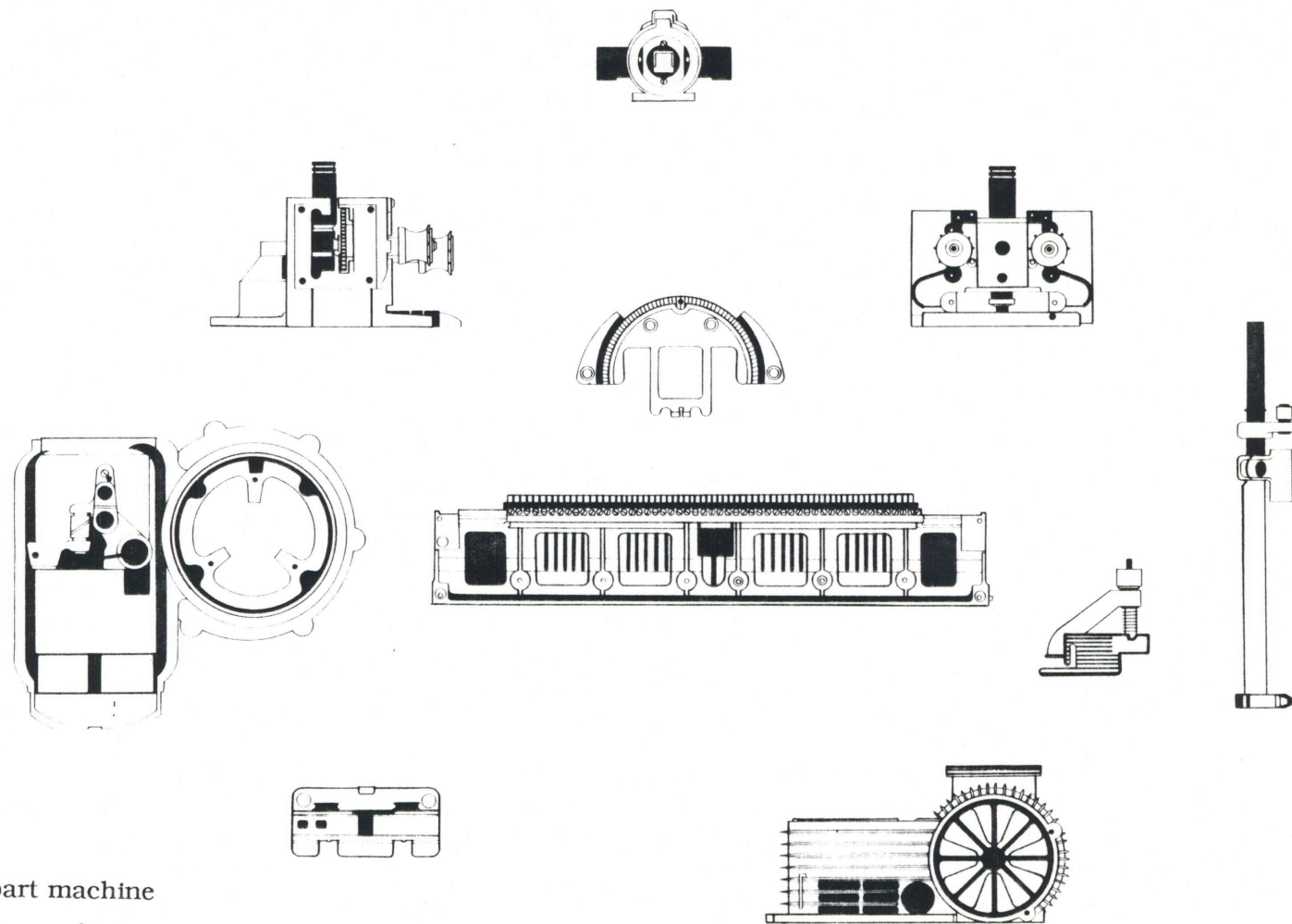
Pick one collage and turn it into a plan.

Draw an axonometric of the plan.

Design two exterior elevations using the same parts and without altering them.

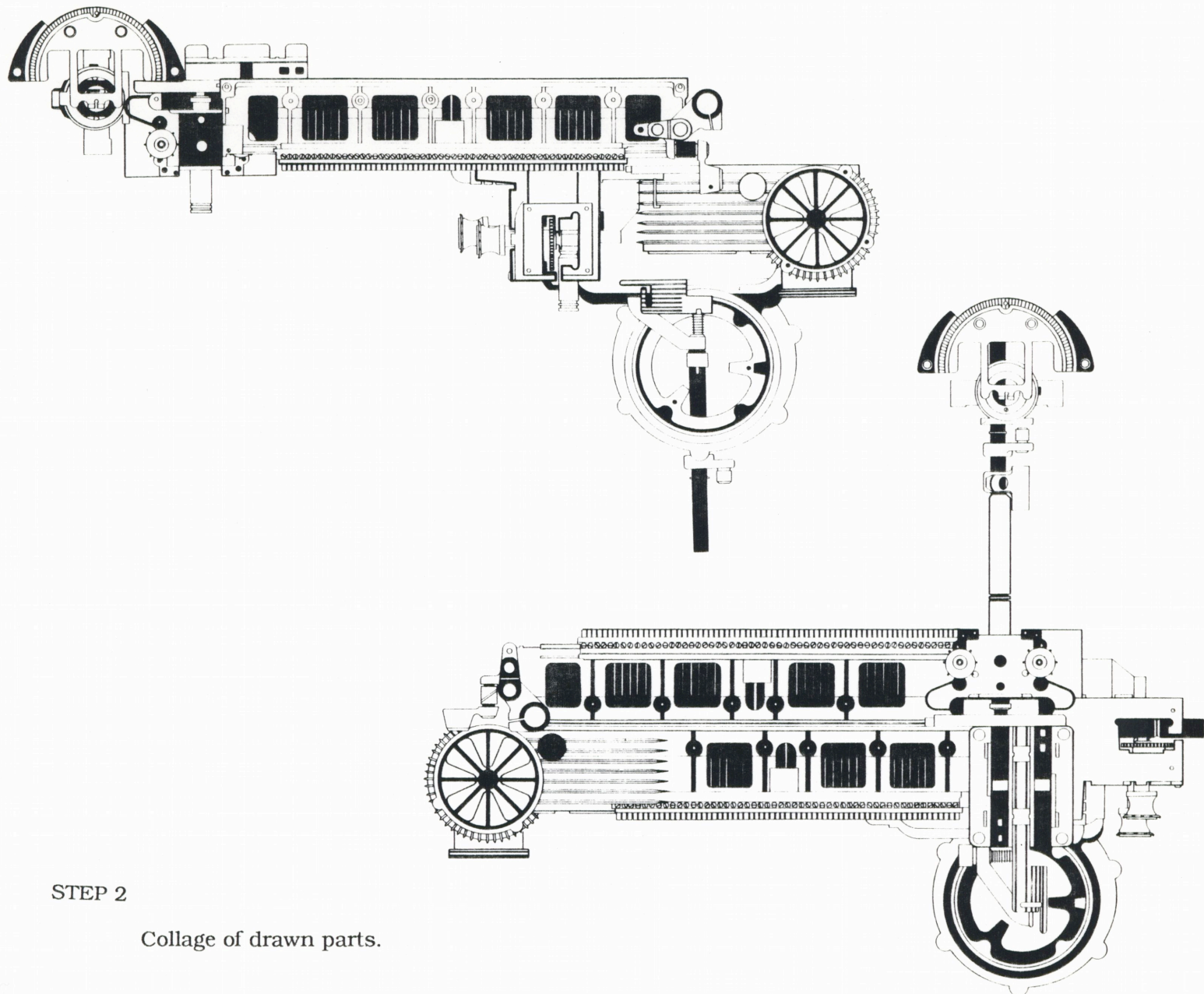
Draw an exterior axonometric (90°).

Build a model.



STEP 1

Take apart machine
Draw pieces of interest

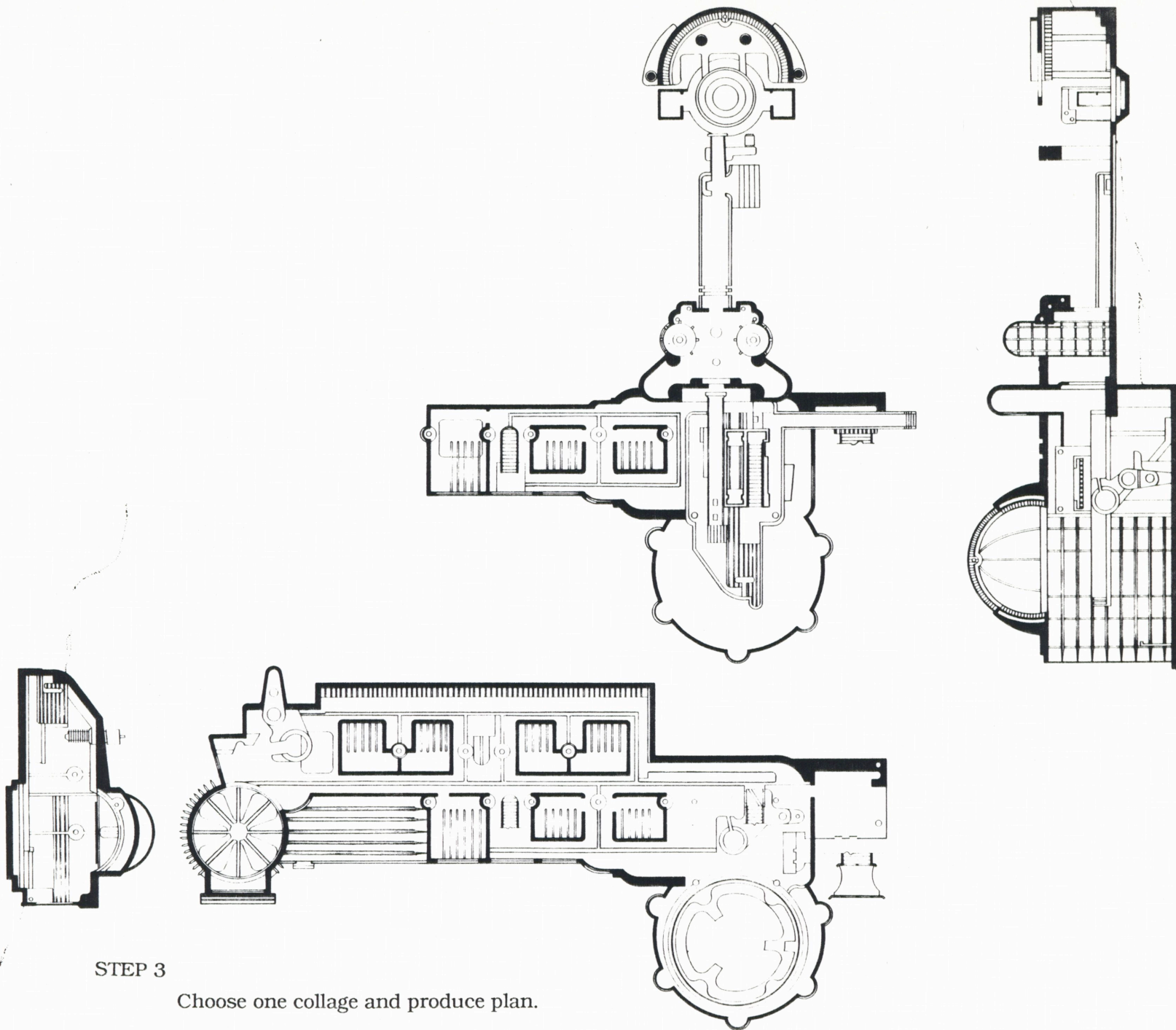


STEP 2

Collage of drawn parts.

EXAMPLES

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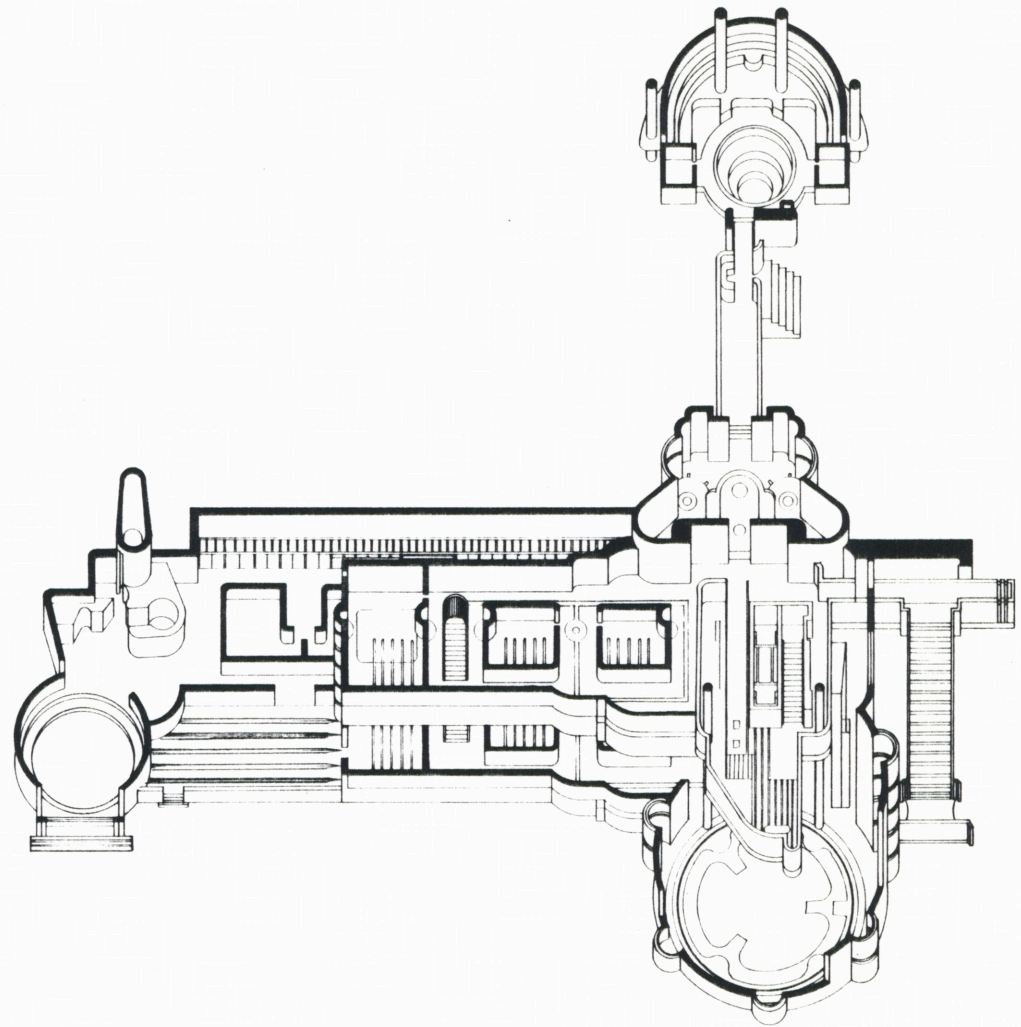


STEP 3

Choose one collage and produce plan.

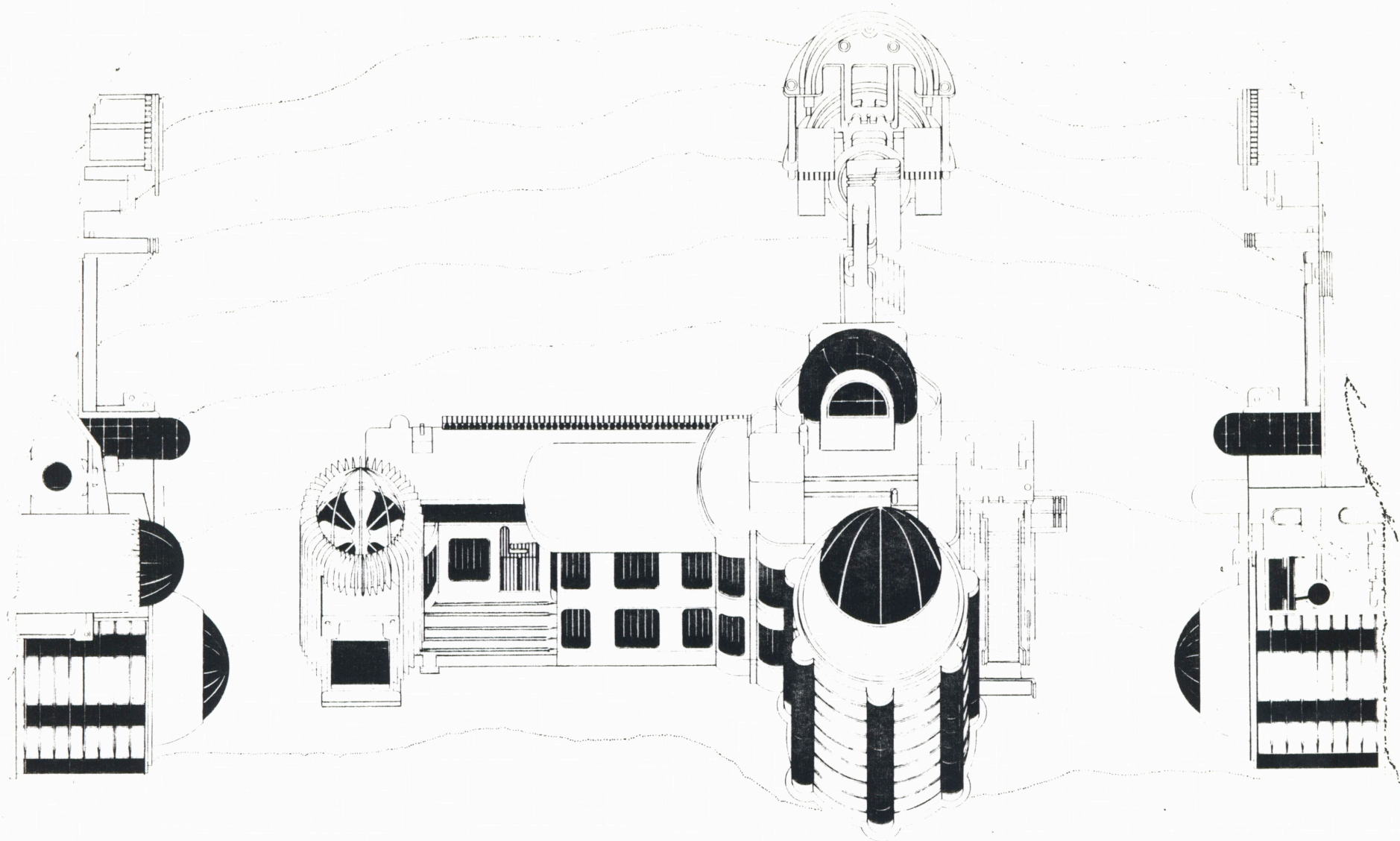
EXAMPLES

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STEP 4

Plan axonometric.



STEP 5

Exterior drawings of building

EXAMPLES

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THESIS

STEPS TO THESIS

First-PROGRAM - starting points, unrestrained path

Site - Gasparilla Island near Fort Myers, Florida, in the Gulf of Mexico.

Time - Year 2020

Size - City with a population of between 1 million and 1.5 million people.

Second- PRECEDENT STUDY - brief presentation of:

Cite Industrielle - Tony Garnier

The City of Tomorrow - Le Corbusier

ARCOSANTI - Paolo Soleri

The first and second steps form the first matrix.

Third - ARBITRARY BEGINNINGS - the second matrix

One to be chosen from:

painting

machine parts

collage

Fourth - DESIGN - the "OTHER" city: **Boca Grande**

The synthesis of matrix one with matrix two

2020

This thesis is the planning of a new city proposed in the Gulf of Mexico in the year 2020. The site chosen is an island off the coast of Florida near Fort Myers. The urban growth of all the coast states has left very little land undeveloped - a concentration of jobs and people is needed. The state of Florida now has only 10 percent of its land undeveloped and most of that is located in the Everglades. The small island of Gasparilla has acreage that was developed but has since been abandoned. The lack of transportation routes has impeded its development. In 1926 there was a railroad from the tip of Gasparilla Island that connected to Atlanta and New York City. The railroad was used for the shipment of phosphorous in the 1920s. As needs changed the railroad line was shut down and most of the tracks were pulled out.

Now in 2020 there has arisen a new need. An ore being used for the production of a substance used as a substitute petroleum product is being mined in Peru, Columbia and Venezuela. The process, discovered in the United States, produces less air pollution and will be less expensive to consumers. The value of this ore has contributed significantly to the economic development of these South American countries and, therefore, the manufacturing of other goods for export.

The shipment of these goods and the ore is being done through the Yucatan Channel which is the shortest route. The railroad line of the 1920s is being reconstructed with highspeed trains to Atlanta, Washington, D.C., and New York City.

Latin America



PRECEDENT STUDIES I

PRECEDENTS

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CITE INDUSTRIELLE - TONY GARNIER

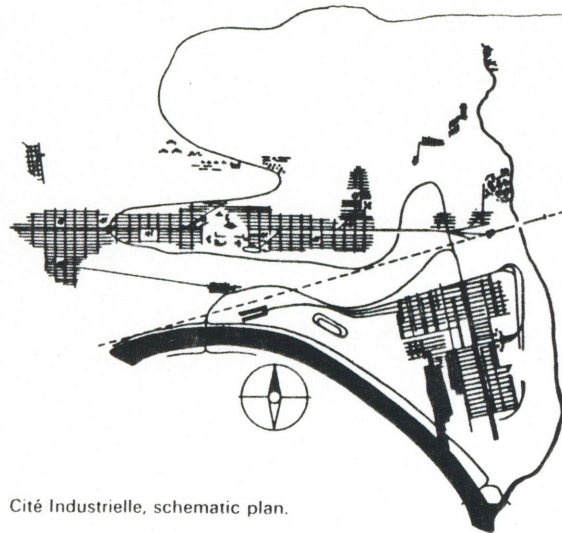


Tony Garnier lived from 1869-1948. His perception of an industrial city in 1901 was an important forerunner in the modern town planning movement of the later 20th Century. By 1920 many of Garnier's ideas in the Cite Industrielle had become doctrine - zoning for usage, specialized centers, insulating greenery, simplified architectural masses, modern clean power and concrete construction.

While at the Ecole des Beaux-Arts in Paris as a student in 1898, Tony Garnier first began the design of an imaginary industrial city. He accounted for all aspects of a real city, including government, cultural, residential, manufacturing and agricultural. The site for the city was a plateau in the southeast of France. Geographically, the city had a lake to the north with a valley and a river to the south. He used location and circulation patterns to separate the functions of the city.¹

The city proper consists of rectangular blocks running east and west and a public area. The public area was then composed of three divisions: (1) assembly and administration, (2) museums, (3) sports and spectacle facilities.

Arterial roads connect the city proper to the appendages, east is the railroad station, southeast a factory, north a silk factory, east of the river are some mines and northeast lies an Old Town area. North of the city on the tributary river is the hydroelectric station and dam which provides power to the city.



Cité Industrielle, schematic plan.

Major areas are separated by green belts, the insulating greenery. Many late 20th Century planners think of this concept as new or modern. The actual carrying out of the idea is probably associated with the 20th Century but Garnier proves the concept existed in the late 19th Century.

The city takes on an elongated East-West form. This results from sensitivity to sunlight and the orientation of rooms within the dwellings. The plan allows for future expansion of all the appendages.

Garnier felt it most important to separate city functions. This was to allow for expansion of independent entities, for functional convenience and for ease of transportation. At the same time he organically interrelated the components of the city, an idea that placed him in the forefront of the 20th Century city planning movement.²

The scheme reveals the 19th Century ideal of a house and a garden for every family. A concept losing importance in the late 20th Century and, I believe, the early 21st Century.

In Garnier's preface to his paper on the Cite Industrielle he specifically included the major elements of contemporary regionalist theory: the Cite was one of a federation of cities, exchanging goods and stressing communication between them. Local crafts were to be taught and local natural resources utilized in the industries of the cite. The theory of promoting and preserving local monuments is evident in the placement of the railroad station to the old town.³

The Cite Industrielle breaks away from regionalist ideals with Garnier's promotion of socialism. He does not stress individual initiative: property is owned in common and public conveniences are for the benefit of all.



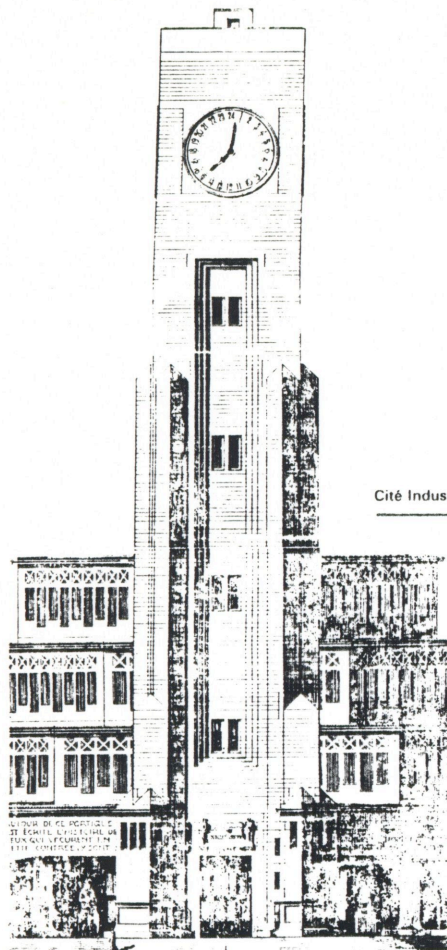
Cité Industrielle, apartment houses, view.

Garnier had lived in the workers' section of Lyons which was oriented toward socialism and was probably what influenced him toward socialist thought. Many public facilities were provided, education was equal for the sexes and there were courts of arbitration rather than law courts. The flour mill, bakery, dairy and pharmacies fell under the jurisdiction of the city government, as well as the dam's electrical energy for heat and light.⁴

There are some aspects that are lacking in Garnier's plan from modern day cities. He purposely leaves out religious structures, a jail, police station and courts of law. Garnier believed in the ideal person. He believed a new society would have no swindlers, robbers or murderers because capitalism would be suppressed. The need for churches would, therefore, also be eliminated.

The entire project was of reinforced concrete and reinforced glass construction. He, however, never presented any technical data on the material or usage. He was concerned only with the aesthetic use of concrete as a material. Any mention of construction reflected only the current structural development of the time. The move toward less ornamentation and abstraction of the built form is visible. His building design did include the concept of elevating a building on piers and roof terraces.

The design of the heliotherapeutic building was considered advanced. The simplicity, repetitive modules, large window areas and the setbacks were progressive for the period.

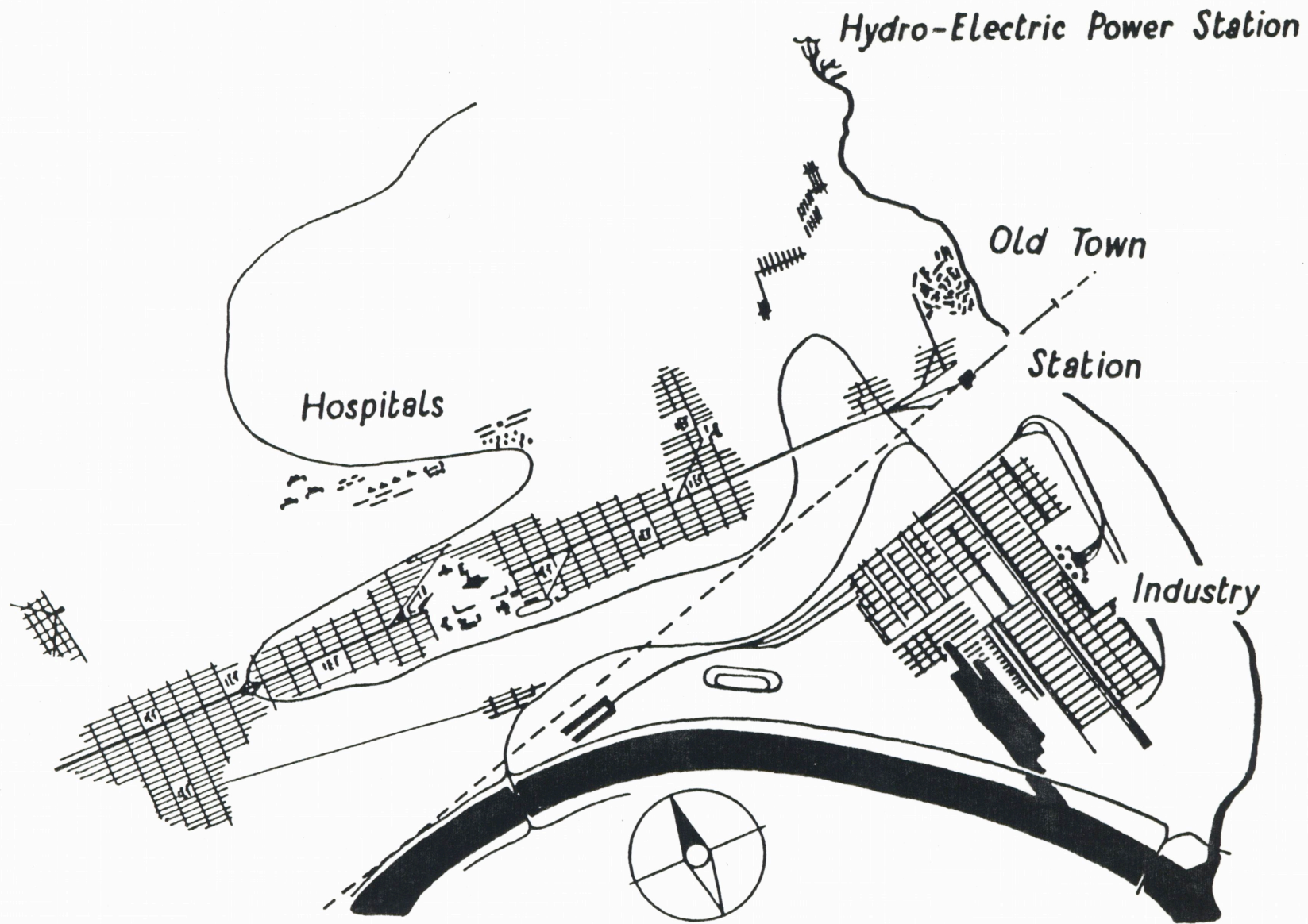


Cité Industrielle, clock tower, elevation.

SALLES D'ASSEMBLÉES
DETAIL ELEVATION
0 5 102

The two major European planning styles of the early 20th Century were: (1) traditional form planning (Paris) and (2) the newer informal planning. Garnier picked the first plan, resulting in geometric shapes, symmetry and long straight avenues terminating in vistas. The clock tower of the Cite is the focus point and termination of an axial vista and all public buildings have symmetrical plans. The monotony of the grid system was broken by the diagonal streets and the projection of the clock tower into the street causing a bend in the road.

Garnier's plan is possibly the earliest scheme known to have taken into account and purpose solutions to many of the problems associated with 20th Century planning. Some historians suggest the plan influenced other projects after the date 1917 when it was published. The most important connection of Garnier with later planners appears to have been through Le Corbusier who visited him as early as 1907. He was the first renowned architect to recognize and discuss the Cité Industrielle.⁵



TONY GARNIER'S PREFACE TO *UNE CITÉ INDUSTRIELLE**

DISPOSITION

The architectural studies presented here with their many illustrations are concerned with the establishment of a new city, Cité Industrielle. Most new towns to be developed will owe their foundation to industrial conditions and the most general case has been considered here. In a city of this kind there normally occur all types of architecture, and it is possible to examine all of them here. In giving the town a medium size (it is assumed to have 35,000 inhabitants), we also pursue the objective of devotion to research of a general nature, which would not be possible in the study of a village or of a very large city. Finally, in this same spirit the site of the city has been chosen so that it contains both mountains and a plain through which a river runs.

The city is imaginary: let us assume that the towns of Rive-de-Gier, Saint-Étienne, Saint Chaumond, Chasse, and Givors have conditions similar to those of this town. The site of this study is located in a region of southeast France, and regional materials have been used in its construction.

Determining factors in the establishment of a similar city should be the proximity of raw materials, or the existence of a natural force capable of being used for energy, or the convenience of methods of transportation. In our case the determining factor in the location of the city is the force of the tributary river that is the power source; there are also mines in the region, but they could be located farther away.

The tributary is dammed; a hydroelectric plant distributes power, light, and heat to the factories and to the entire city.

The principal factories are situated in the plain at the confluence of the river and its tributary. A main-line railroad passes between the factories and the town, which is located above the factories on a plateau. Higher still are placed the hospitals; they, as well as the city, are sheltered from cold winds, and have their terraces oriented to the south. Each of these main elements (factories, town, hospitals) is isolated so that it can expand; allowance has been made for this growth although the study has been pursued from a more general point of view.

Investigation of the most satisfactory program for the material and moral needs of the individual has resulted in the creation of rules concerning road use, hygiene, and so on; the assumption is that a certain progress of social order resulting in an automatic adoption of these rules already has been realized, so that it will not be necessary to enact actual laws. Distribution of land, everything related to the distribution of water, bread, meat, milk, and medical supplies, as well as the re-utilization of refuse, will be given over to the public domain.

* Translation by Dora Wiebenson

HABITATIONS

Many towns have already put into effect hygienic rules, which vary according to climatic or geographical conditions. In this city we have imagined that orientation and the general direction of the winds suggest particular architectural practices, of which the following is a summary;

1. In residences, each bedroom ought to have at least one window, large enough to illuminate the whole room and to allow the direct rays of the sun to enter;
2. Courts and light wells, or enclosed spaces used for illumination or ventilation, are prohibited. All spaces, however small, should be lighted and ventilated from the exterior;
3. On the interior of the residences the walls, floors, etc. are to be of smooth materials, with rounded corners.

These rules, required for residences, are also to be applied where possible to the designs of public buildings.

The area of the residential quarter is divided into blocks of 150 meters in the east-west direction and 30 meters in the north-south direction; these blocks are then divided into lots of 15 by 15 meters, one side always abutting on a street.

Such a division provides for the best utilization of the land and satisfies the rules stated above. A residence or any other building may occupy one or more lots, but the building ought always to occupy less than half the total area. The rest of the lot forms a public garden for pedestrian use: that is, on the open part of the lot a public passage should be provided going from the street to the building located behind. This arrangement allows pedestrian circulation through the city in any direction, independent of the street pattern: the land of the town, considered as a whole, is similar to that of a great park, without any wall or enclosure limiting the terrain. The minimum distance between two dwellings in the north-south direction is equal to at least the height of the building situated on the other side. Because of these rules, which do not permit the use of more than half the land and which prohibit enclosures, and also because the land is graded for drainage, there will be variation in the overall design.

The city is composed of a grid of parallel and perpendicular streets. The most important street originates at the station, and runs from east to west. The north-south streets are 20 meters wide and are planted on both sides; the east-west streets are 13 meters or 19 meters wide; those of 19 meters are planted only on the south side, those of 13 meters not planted at all.

ADMINISTRATION—PUBLIC BUILDINGS

In the center of the city a large space is reserved for public buildings

They form three groups:

- I. Administrative services and assembly rooms.
- II. Collections.
- III. Facilities for sports and spectacles.

Groups II and III are in a park which is bounded on the north side by the principal street and Group I; on the south a planted terrace opens onto a view of the plain, the river, and the mountains on the other bank.

Group I. The assembly rooms include:

1. An open-air assembly center for 3,000 people, to be used for meetings and for listening to gramophone recordings of music and parliamentary meetings: for large meetings there will also be;
2. An amphitheater for 1,000 spectators, and two other amphitheaters of 500 seats each. These three rooms are devoted to conferences and projections, etc.
3. A large number of small meeting rooms (each having an office and vestibule) for societies, syndicates, and various other groups.

All these rooms are accessible from a vast portico forming a covered promenade which is located at the center of the city, and under which a great crowd is able to walk, sheltered from intemperate weather.

To the south of this portico a clock tower visible for the entire length of the principal street, marks the center of the city from a distance.

The administrative services include:

1. A building containing the offices of the city council, those of the public records (births, marriages, deaths), and those of the tribunal of arbitration, each of these services having public rooms, committee rooms, and office dependencies;
2. Another building composed of offices where all the organs of the city have at least one employee in contact with the administration;
3. A third building for laboratory analysis;
4. Finally, a building, near the firehouse, for the administration archives.

There are also services for labor organizations, which include employment offices, information offices, a group of offices for the syndicates and associations, and hostels and dining halls for accommodating the temporarily unemployed.

There are also medical services, which include a building for medical consultation, a pharmacy for the distribution of medicine, and a hydro-therapeutic medical service.

To the south and on the principal street is the postal service: mail, telegraph, telephone.

Group II. This group includes the following collections:

1. Historical collections, documents important to the city for archaeological, artistic, industrial, or commercial reasons. In the park, outside the rooms containing the collections, are permanent monuments.
2. Botanical collections, in the garden and in a large greenhouse.
3. The library, including a very large reading room, one side of which is reserved for the consulting of works from the library, the other for the periodical and print rooms, and a very large map room in the middle of which is a study map of the world with a raised surface. At the entrance to the library are the indispensable dependencies for cataloguing, book-binding, classifying, printing, offices for circulating books, etc., and all around, storage space.
4. A large isolated room, with four entrances, designed for temporary exhibitions, where it is possible to present either several simultaneous exhibitions or a single one of greater importance

Group III. Facilities for sports and spectacles include:

1. A room for spectacles and theatrical productions (1,900 seats) with all the necessary dependencies; a movable stage permitting the reduction of the entr'actes and the suppression of off-stage and above-stage scenery; facilities for the actors, the orchestra, and the scenery; vestibules and toilets, foyer and buffet for the public.
2. A sunken semicircular space, analogous to antique amphitheaters, for outdoor productions, framed by a curtain of trees.
3. Gymnasiums.
4. A large public bath establishment with hot and cold pools, many dressing rooms and baths, shower rooms, massage and resting rooms, a restaurant, a fencing room, and an indoor training track.
5. Area for games (tennis, football, etc.), for training tracks for cyclists and walkers and for jumping, discus-throwing; etc. Covered tribunals and tiered terraces that are sheltered by trees border one side of these terrains.

Groups II and III are arranged, as has been previously mentioned, in planted gardens, and consequently are traversed by promenades with benches for resting, fountains, etc.

The construction of all the public buildings is of reinforced concrete and reinforced glass.

SCHOOLS

In some parts of the city, chosen for convenience and allocated by district, are located the primary schools for children up to fourteen years coeducational schools, that is, the same classes contain boys and girls, the separation of children depending only on their age and advancement in instruction.

A special street landscaped as a garden separates the classes of the younger and older children, and serves as a playground for them while they are waiting for classes; there are also covered and open play yards. Besides classrooms, each school contains a projection room. Nearby are the directors' and superintendents' houses.

At the northeast extremity of the city are the secondary schools; the education given in them is designed for the needs of an industrial city; there is specialized education for a small number of students undertaking administrative or commercial careers, a professional artistic education for a few, and, for the majority, vocational industrial education. These secondary schools are attended by all young people from the age of fourteen to twenty. Some who have been recognized as gifted are directed toward higher education at a special school or college elsewhere.

The professional arts school is designed to produce craftsmen in the industrial arts who specialize in architecture, painting, sculpture, and all their practical applications in furniture, fabrics, linen, embroidery, costume designing, ceramics, copper, tin or iron work, glasswork, pottery, enamels, printing, lithography, photography, engraving, mosaics, sign-painting, poster-painting, and so on.

The industrial school is concerned mainly with the two principal regional industries, the metallurgic industry and the fabrication of silk. In consequence, a special facility is included whereby all phases of the industrial processing in each of these industries can be followed.

HOSPITALS

The Hospitals (715 beds) situated on the side of the mountain to the north of the center of the city, are sheltered from cold winds by the mountain; curtains of greenery frame them to the east and the west. They contain four principal parts;

1. The main Hospital Building;
2. The Heliotherapeutic Building
3. The Hospital for Contagious Diseases;
4. The Hospital for Invalids.

The whole and all details are designed according to the latest advancements in medical science. The disposition of each of these elements is arranged so that its expansion is possible.

PUBLIC SERVICES

Certain services are under the jurisdiction of the city administration and are liable to its special dispositions. These services are slaughtering, the manufacture of flour and bread, water service, processing of pharmaceutical products, and dairy products.

The city administration is concerned with the drainage of water and disposal of waste material, with the utilization of refuse; it should also regulate the dam, furnish motor power, light, and heat to the factories and to special areas. It is necessary to have a general installation for this purpose; each locality should be ventilated, heated, illuminated, and should be supplied with hot and cold water, street-cleaning facilities, etc.

FACTORIES

The principal factory is for metallurgy. Mines in the vicinity produce the raw materials, and steam power is generated from the tributary river facilities.

The factory manufactures pipes and iron bars, extruded iron sections, tools, wheels, machine tools, and agricultural machines; metal frame mountings, the material for railroads and navigation, automobiles and airplanes are made here.

Consequently, it contains blast furnaces, steel-works, space for the large presses and the great hammers, workrooms for mounting and adjusting items, a shipyard for the launching and repairing of boats; a special harbor branching off from the main river, a dock, assembly plants for body work, plants for refractory products, and so on; testing tracks for the different automobiles, numerous laboratories, housing for the engineering personnel. Naturally there are dependencies distributed throughout all sections: toilets, cloakrooms, dining halls, medical aid stations, etc.

Some large avenues, planted quincuncially with trees, connect the different parts of the factory. Each section is arranged in such a manner that it is able to grow independently and without harming the other sections.

On the periphery of these main parts of the city are subsidiary elements: farms for agricultural exploitation, cocooneries, silk-mills, and so on.

STATION

The station quarter is zoned mainly for apartment houses hotels, department stores, etc., so that the rest of the city will be free of high structures. On the plaza facing the station are the open-air markets.

The station of average size, is at the junction of the great artery coming from the city with the roads that lead to the old city situated beside the mountain tributary; the principal factory operates nearby. The public services of the station are at street level; the tracks below are accessible from platforms and waiting rooms at the lower level. Its large clock tower is visible throughout the entire city. The freight station is to the east; that of the factory, to the west.

The tracks should be completely straight, so that the trains can move as rapidly as possible.

CONSTRUCTION

The materials used are concrete for the foundations and walls, and reinforced concrete for the floors and ceilings. All the important buildings are constructed of reinforced concrete.

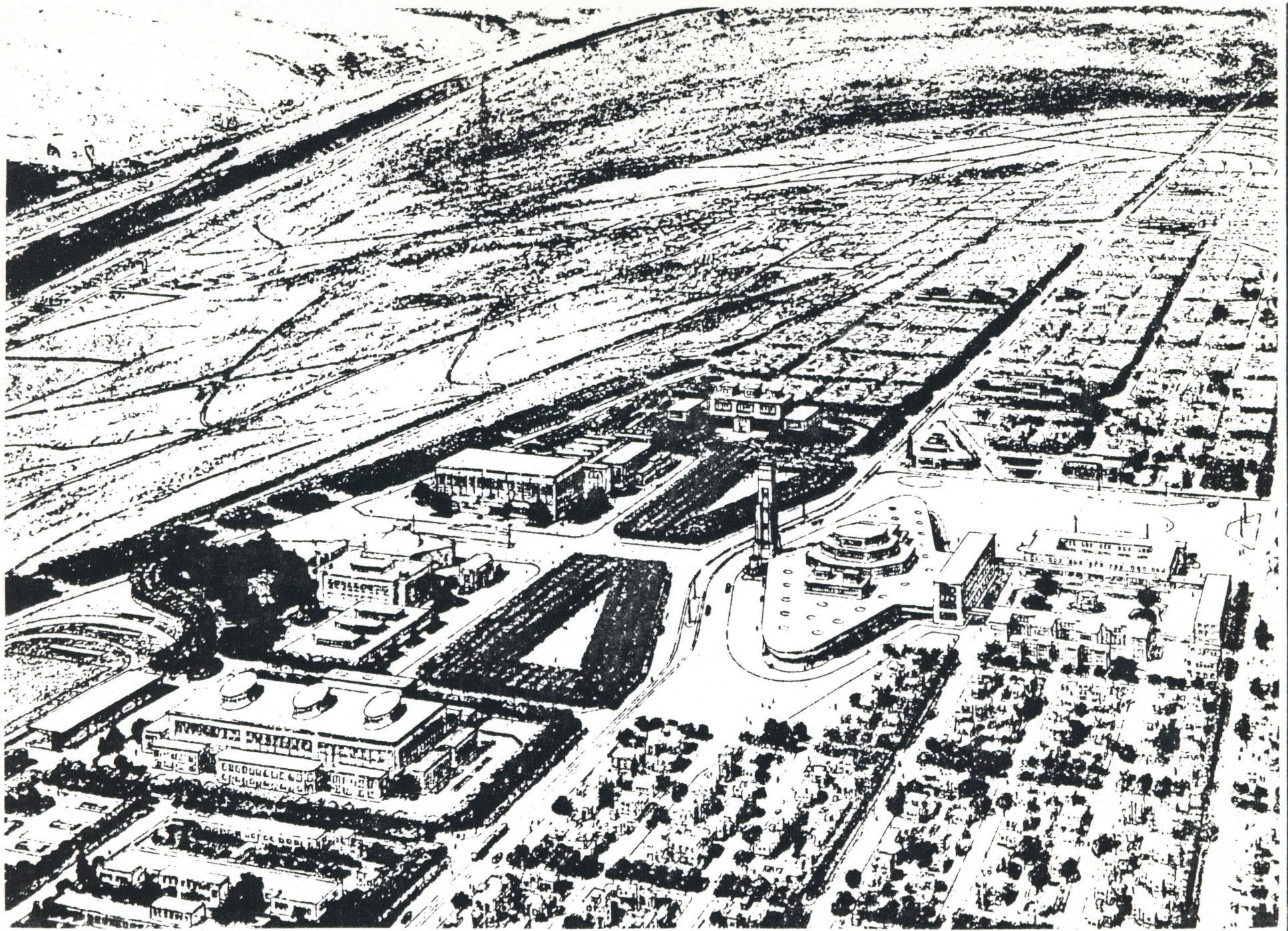
These two materials are prepared in molds made for this purpose. The simpler the molds, the easier will be the construction, and consequently the less the cost. This simplicity of means leads logically to a great simplicity of expression in the structure. Let us note also that, if our structure remains simple, unadorned, without molding, bare, we are then best able to arrange the decorative arts so that each object of art will retain its purest and clearest expression because it will be totally independent of the construction. Besides, who would not see that the use of such materials results in the obtaining of the horizontals and verticals that are proper to give to the construction that calm and equilibrium that will harmonize with the lines of nature? Other systems of construction, other materials, lead, without doubt, to other forms which it would also be interesting to study.⁶

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*UNE CITÉ INDUSTRIELLE*⁷

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"Here is summarized the program of the planning of a city, in which it is exemplified that work is the human law and that there is enough of the ideal in the cult of beauty and order to endow life with splendor."⁸

Tony Garnier



Tony Garnier footnotes

¹ Wiebenson, Dora, *Tony Garnier: The Cite Industrielle*, George Braziller, Inc., New York, N.Y., 1969, p. 11.

² *Ibid*, p. 16.

³ *Ibid*, p. 18.

⁴ *Ibid*, p. 18.

⁵ *Ibid*, p. 98.

⁶ *Ibid*, pp. 107-112.

⁷ *Ibid*, p. 113.

⁸ *Ibid*, p. 112.

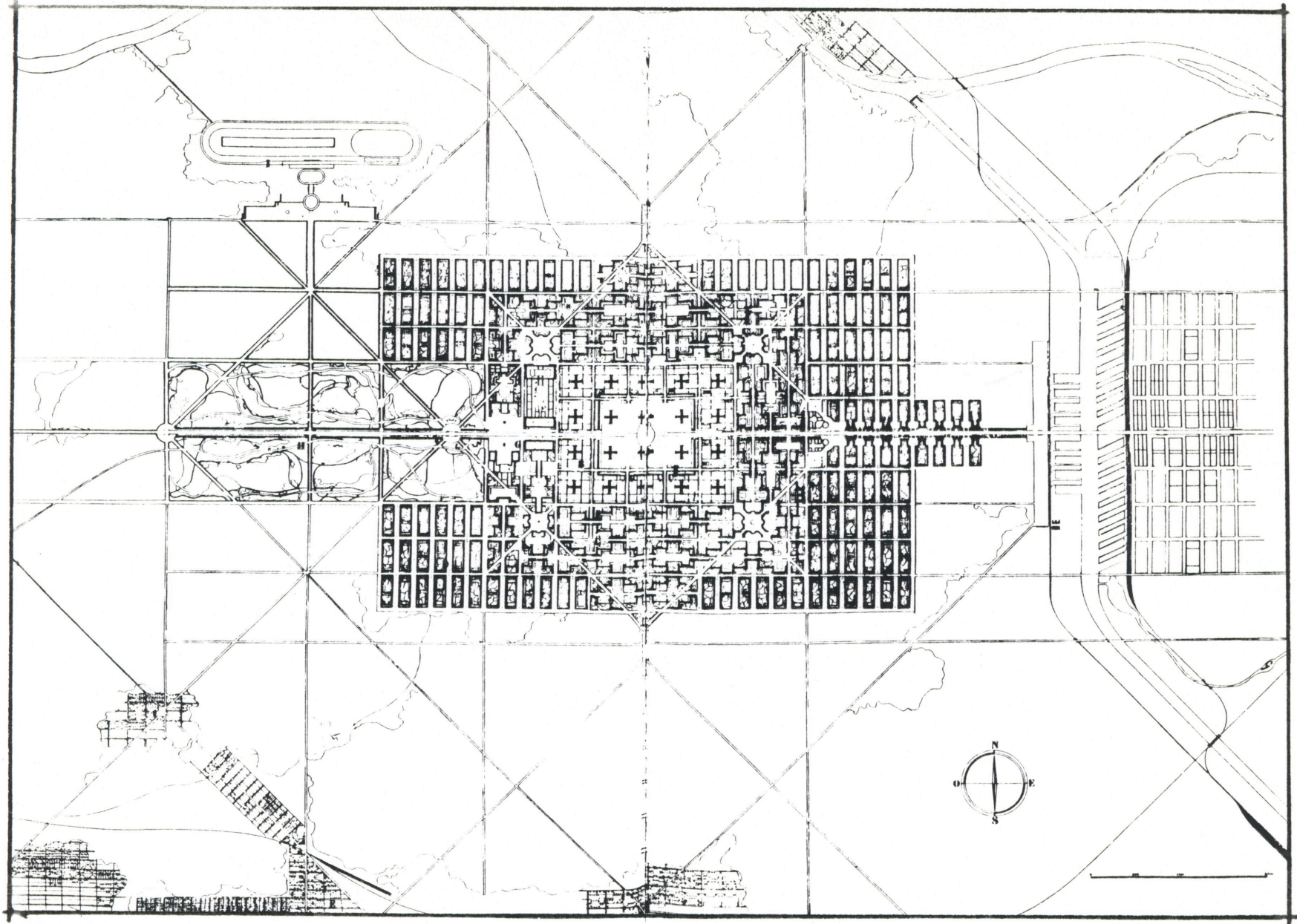
CONCLUSIONS FROM TONY GARNIER PRECEDENT STUDY

The Cite Industrielle was conceived with a real site in mind. Garnier chose the site by the agriculture that existed, the mining, the ranching (sheep) because of the availability of transportation by water and the tributary river which would be the source of power for the city.

Garnier's Cite Industrielle was an exercise in zoning. He wanted all appendages to be able to expand. There were no multi-use areas. It is a grid design in the east-west direction with the most important street originating at the station and running east-west.

Where Garnier and I disagree is with his socialism theory and, beyond that, I would favor mixed use. His city does not have the foresight of vertical expansion but it has a very humanistic quality if kept on a small scale. However, if a lot of expansion was to occur the plan would sprawl. His design was for 35,000 inhabitants. Like Soleri's Arcosanti his plan was to use the regional materials in the construction and farm the land around the city.

Le Corbusier's Plan

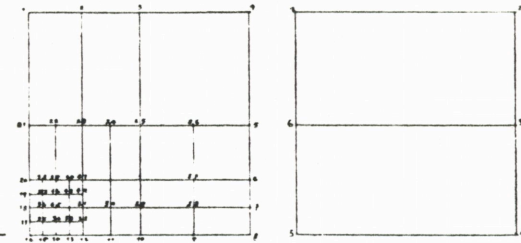


A CONTEMPORARY CITY

PRECEDENTS

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THE CONTEMPORARY CITY - LE CORBUSIER



A. A diagram showing the system of street crossings in a typical existing town.

B. A diagram showing crossings at distances of over 400 yards.

Le Corbusier's work on his contemporary city for 3 million inhabitants was first shown in Paris November 1922.¹

Le Corbusier states that the city of today is a dying thing because it is not geometrical. The result of a geometrical layout is repetition. The result of repetition is a standard, what he calls the perfect form. He also believed "there is no first rate human production but has geometry at its base, it is of the very essence of Architecture."²

In defense of his geometry, he states in the beginning of his book that man by nature practices order; his actions and his thoughts are dictated by the straight line and the right angle. "Man walks in a straight line because he has a goal and knows where he is going; he has made up his mind to reach some particular place and he goes straight to it."³

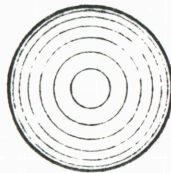
Le Corbusier's city is based on the gridiron with streets 400 yards apart (a few are 200 yards apart.)⁴

He picked what he thought was an ideal site. His design was not to solve specific problems of a site but to be universal and solve fundamental problems of urban planning. His objective was to find the fundamental principles that make up the skeleton of modern town planning.

TRAFFIC MOVEMENT IN GREAT
CITIES.



*Present conditions leading
to the crisis which is only
just beginning.*



De-congest the centres.

The site picked was level because he believed it the ideal. He placed the city away from the river and its liquid transportation explaining that even though picturesque, the industrial system does not cut through the center of the city.

His first goal was to design a city with a well-organized center. A center that is compact, with rapid movement, and concentrated. His second goal was an extensive and elastic Garden city on the periphery. A reserved zone, like Garnier's green belt, was to lie between the two. Le Corbusier's name for the zone was a "fresh-air reserve."⁵

His theory for the protected zone was that all building would be prohibited; reserved for the growth of the city. It would consist of woods, fields and sports grounds.⁶

The population of the city is composed of three groups:

1. the citizens who live and work in the city
2. suburban dwellers who work in the outer industrial zone and live in the garden cities and
3. a mix of citizens who work in the city but live in the garden cities.

The population breakdown helped to identify the relationship of city to industrial city to garden city.

The more dense the population of a city the less distance traveled. He wanted to dramatically increase the density of the center where business was conducted. He contended that the modern towns could expand only at the expense of the open spaces. A condensed center increases open space and diminishes distances, therefore, the center must be constructed *vertically*.⁷

"A city made for speed is made for success." ⁸

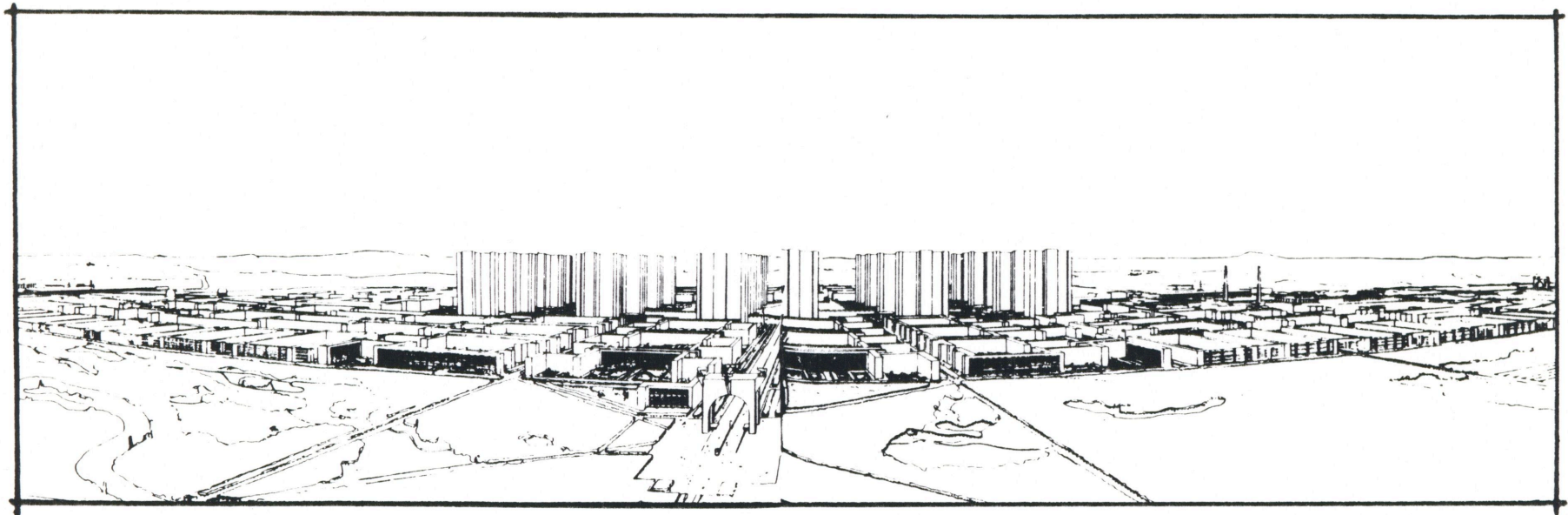
Traffic in "The Contemporary City" is of three types: heavy goods traffic; lighter goods, vans making short journeys in all directions; and fast traffic, distances transversed fast. He proposed three types of roads to match the individual demands of the traffic:

- I. Ground level roads - here the concrete piles of the buildings are seen. In the open spaces between piles the heavy goods traffic would load and unload.
- II. A network of ordinary streets moving traffic in all directions (ground level).
- III. Arterial roads one level up for fast traffic moving north and south and east and west. These are huge reinforced concrete structures 120 to 180 yards across and they are entered and exited every 1/2 mile from roads on the first floor level.⁹

Le Corbusier's modern street had many components. Besides vehicle transportation it contained gas, water and electric mains which would be accessible along the entire length. The older corridor-street was to exist no longer as it poisoned the houses which fronted it. Le Corbusier maintained urban dwellings should be built away from the street, without internal courtyards, and with windows that look out to large open spaces.

IN SUMMARY, LE CORBUSIER'S BASIC PRINCIPALS ARE:

1. We must decongest the center of the city.
2. We must increase center density.
3. We must be able to transverse the city with speed.
4. We must increase parks and green spaces.¹⁰



A CONTEMPORARY CITY

A panoramic view of the city and its protected zones of woods and fields.

The rail station is at the very center of city.

Two main arteries, 120 yards wide and elevated, run east-west and north-south.

Open spaces at the foot of the skyscrapers, 2,400 yards by 1,500 yards. These spaces would be parks, gardens and avenues containing restaurants, shops, theaters, halls and parking.¹¹

Skyscrapers 60 stories high designed only for business use 10,000 to 50,000 employees (400,000 to 600,000 inhabitants). Their density is 1,200 persons per acre.

Left of the skyscrapers are the public buildings.

Right of the skyscrapers are the warehouses and industrial quarters.

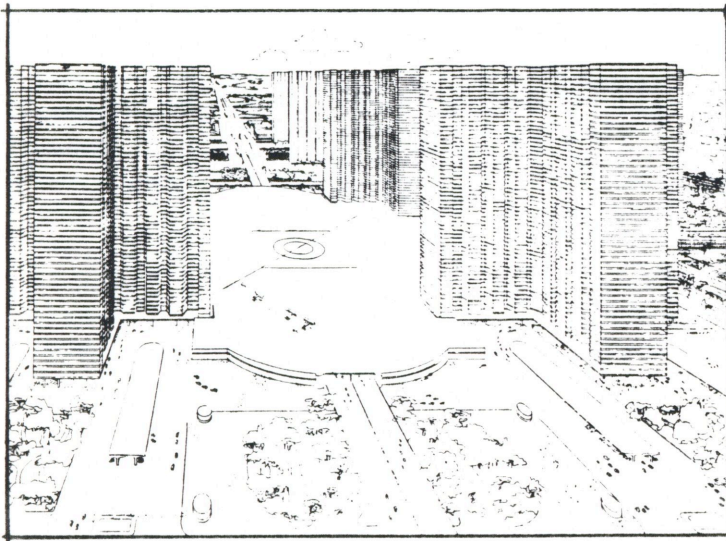
The residential blocks with parks on perimeter.

120/per acre (600,000 inhabitants)

The protected zone lies all around city.

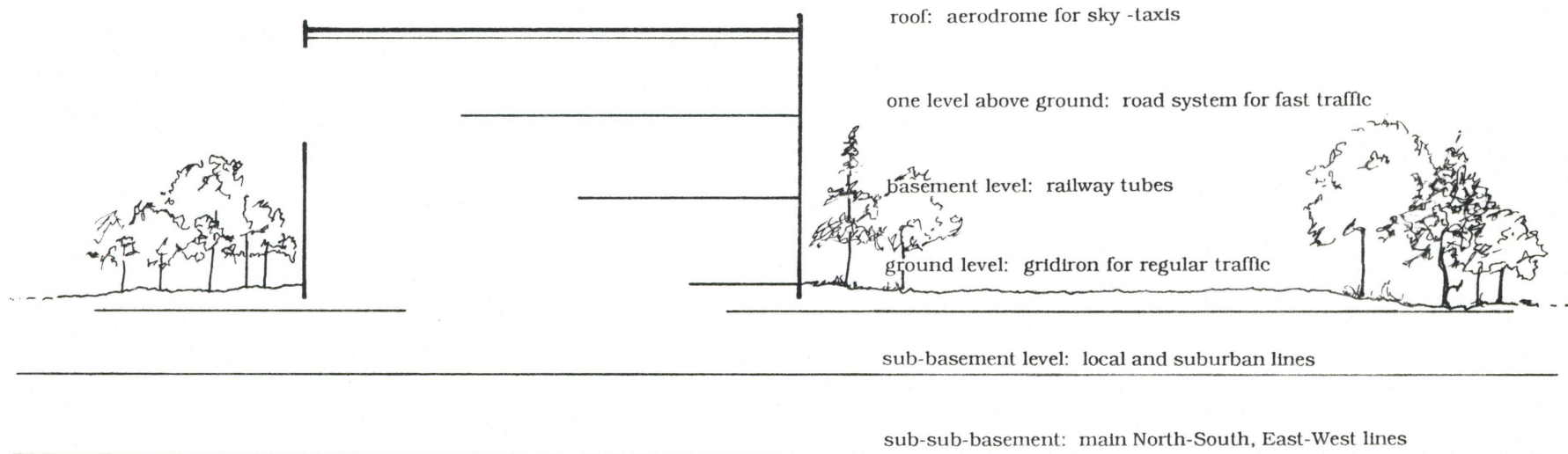
Past the protected zone are the Garden cities. (2,000,000 inhabitants).¹²

Percent open space is as follows: central skyscraper area 95%, residential blocks with setbacks 85%, cellular residential blocks 98%.¹³



VIEW OF THE CENTRAL STATION, FLANKED BY FOUR SKY-SCRAPERS

The Station



THE CONTEMPORARY CITY - LE CORBUSIER

FOOTNOTES

- ¹ Le Corbusier, *The City of Tomorrow*, MIT Press, Cambridge, Mass., 1971, p. 159.
- ² *Ibid*, p. 121.
- ³ *Ibid*, p. 10.
- ⁴ *Ibid*, p. 165.
- ⁵ *Ibid*, p. 162.
- ⁶ *Ibid*, p. 171.
- ⁷ *Ibid*, p. 163.
- ⁸ *Ibid*, p. 179.
- ⁹ *Ibid*, p. 164.
- ¹⁰ *Ibid*, p. 166.
- ¹¹ *Ibid*, p. 167.
- ¹² *Ibid*, p. 168.
- ¹³ *Ibid*, p. 168.

CONCLUSIONS FROM LE CORBUSIER PRECEDENT STUDY

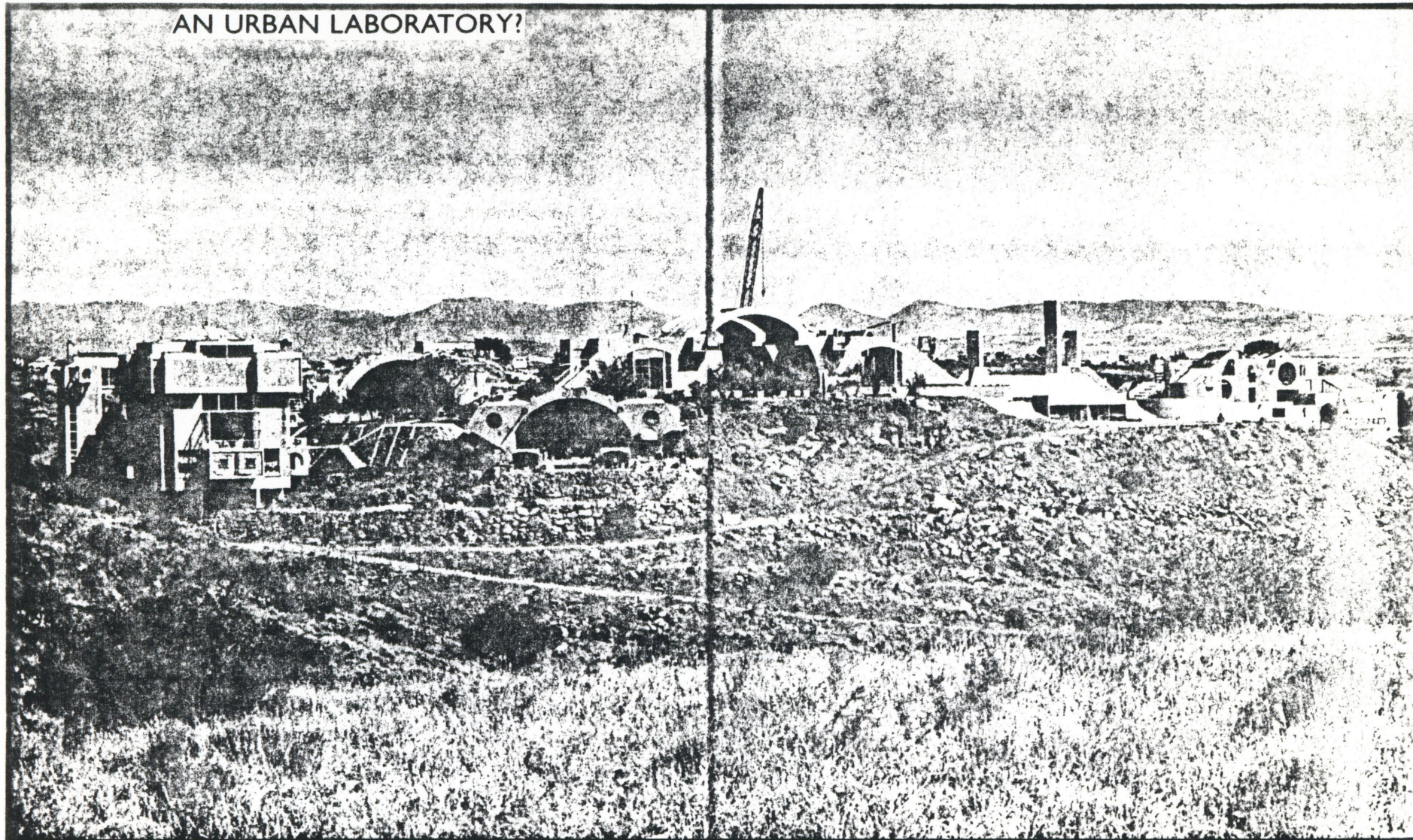
First of all, I do not agree that the straight line and right angle are the only way to design. Le Corbusier's statement that the city of today is dying because it is not geometrical is simply not fact.

He wanted no actual site for his design because he was looking for general principles to urban design, but would not every site alter those principles?

I agree with the concept of a compact center, rapid movement (transportation) and concentration. The less distance to be traveled the better for the inhabitants and efficiency. His levels of transportation are too many and are confusing. He seems to have given more thought to the horizontal matrix than to the vertical matrix, the synthesis between the two not being well defined.

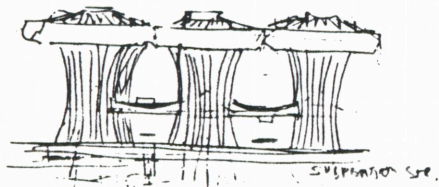
ARCOSANTI

AN URBAN LABORATORY?

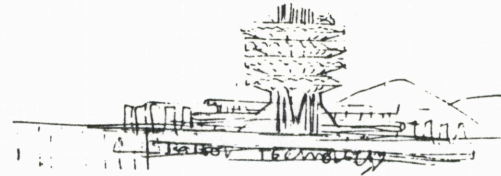


Arcosanti Site, 10/83

PHOTO: COSANTI FOUNDATION



In an article entitled *"New Architecture: Building for Man,"* (Newsweek, April 19, 1971) Soleri said, **"If we don't build up we will be engulfed by urban sprawl before the year 2000."**



ARCOSANTI - PAOLO SOLERI

His work = Arcology = Architecture + Ecology

Paolo Soleri is known as a Utopian architect because of his visionary drawings, writings and models. Visionary cities, that he himself says, will never be built "until our society has cleansed itself of political, economic and moral inequalities."¹

Soleri maintains in nature there are three basics:²

COMPLEXITY: Many events and processes cluster wherever a living process is going on. The makeup of the process is infinitely complex and ever intensifying.

MINIATURIZATION: The nature of complexity demands rigorous utilization of all resources -- mass-energy and space-time, for example. Therefore, whenever complexity is at work, miniaturization is mandated and a part of the process.

DURATION: Process implies extension in time. Temporal extension is warped by living stuff into acts of duration. A possible resolution of such "living time" is a metamorphosis of time into pure duration, i.e., the eventual "living outside of time."

drawings from Soleri's sketchbook

Soleri writes that a community must contain these three elements in order to be a "living organism" and to improve itself.

He points out that in nature unlimited sprawl exists at the lower levels of evolution, using the coral reef as an example but there are many plant forms that keep building upon themselves. At the upper level of evolution he observes bees and wasps with their hive communities. He calls these "optimal dimensions" and says social milieu (setting) seems to demand containment and scale.³

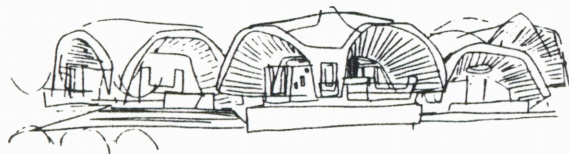
"Society must become a single organism in order to adequately produce. This is only possible through miniaturization and we can begin by miniaturizing man's container, the city."⁴

The intent of arcology is not "smallness" but miniaturization.⁵ He says Los Angeles is a megastructure and that all two dimensional grids are mega grids, causing waste in commuting and segregation. Miniaturization requires a highly complex structure that frees, not limits, performance and therefore enhances frugality.⁶

"Exodus of populations toward the megacities"⁷ is Soleri's phrase for the departure of the small town's population toward the city's economic enticement, which he says is not sufficient nor an adequate solution, however these people move to the suburbs not the "city." He is also speaking of the city people moving to the suburbs so the final result is neither group is experiencing living in the city.

Soleri says "suburbia is one aspect of the greed and social indifference at the roots of hunger. An almost religious respect for the good agricultural lands-and a better use of marginal lands for growing staples-could help in abating hunger and put more immediacy in the whole food-equity equation."⁸ He proposes in his city cultivation of the lands around it. Keeping the inhabitants in touch with the food chain and in close proximity (economics.)





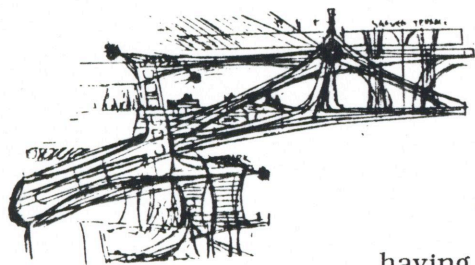
Soleri believes that future cultures might flourish in what are called "marginal lands." and thereby saving the fertile plains for needed crop cultivation. He then states these land are beautiful and at times inspiring (a paradox for me.)

In 1971 Soleri began building his visionary city "Arcosanti," which was intended to house 3,000 people in a single 25-story megastructure that should occupy ten acres of an 860-acre site.⁹

The project is located 65 miles from Phoenix, Arizona, 36 miles from Prescott and 80 miles from Flagstaff.¹⁰

The project is built not only on marginal land but in an arid climate with fresh water becoming the most important factor.

Soleri describes sprawl as a pathological event (caused by the virus of the automobile.) The shortcomings are environmental disruption, waste, pollution, energy and time depletion, segregation and urban decay.¹¹ There are no "public" roads at Arcosanti so the automobile is eliminated from the city.



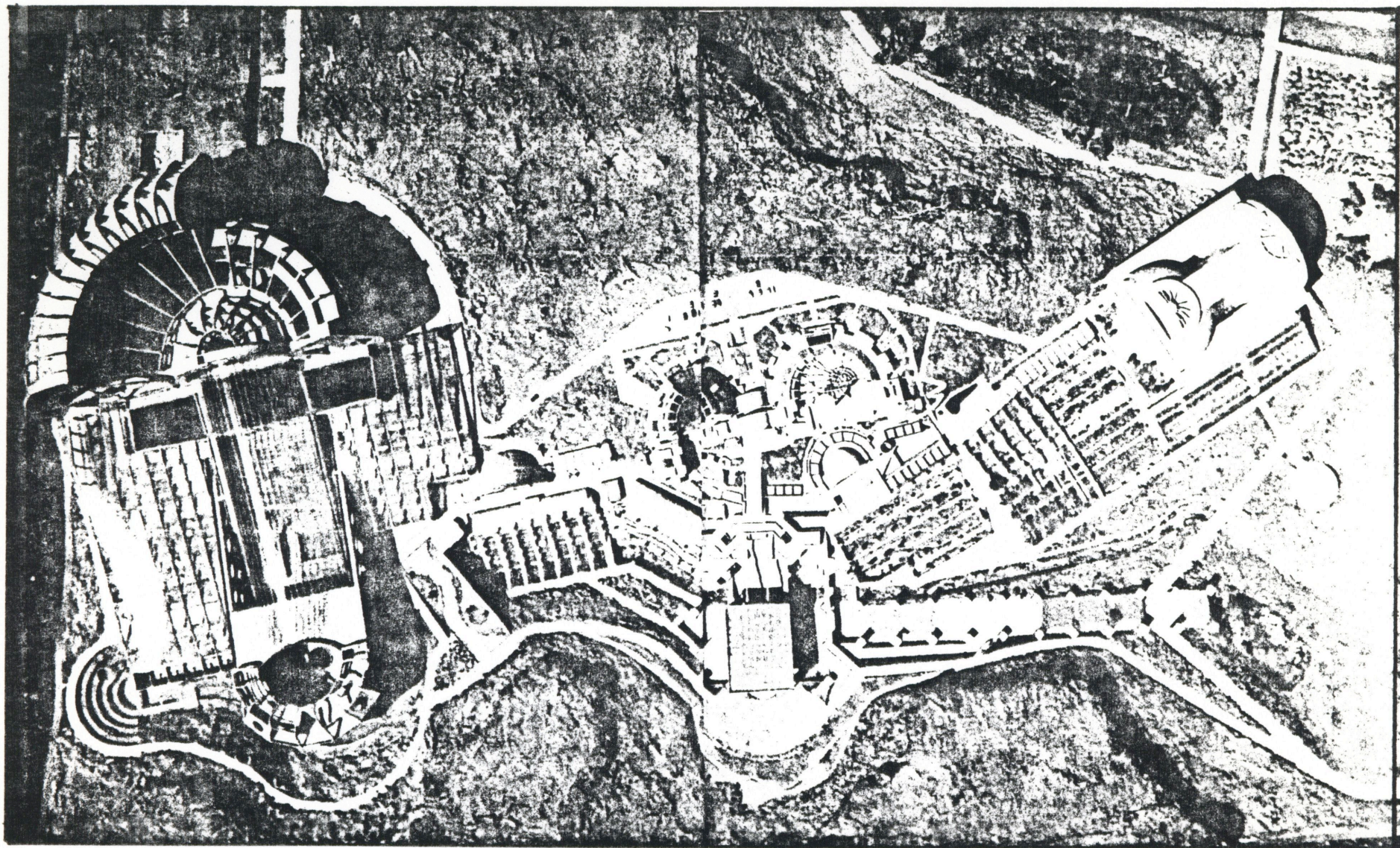
The intent of the project is to "legislate by design." Two instances are by not having roads and by mixing living, learning and working.¹² He wishes to place physicians close to patients, grandmas close to grandchildren and all close to nature. He favors mixed use because of the novelty and liveliness it provides.

Soleri's theory is that in order to save nature we must pack men into highly compressed, complex organisms -- the new city -- and radical new social forms must evolve. He looked to Arcosanti to test what these new forms might be.

While in the laboratory stage capitalism and communism will collide, the outcome not known. "The individual who has denied society will be low on the scale of worth, as low as the society that has denied the individual."¹³

This project is a testing ground for information leading to better planning, to find the correct balance.

Arcosanti is a laboratory, not a utopia.¹⁴ Soleri makes no pretense of having a final solution.



Arcosanti "Critical Mass" Model

PHOTO: TAMIaki TAMURA

SOLERI - "For a *democracy of excellence* the goal is not to pull things down to a common denominator but to pull things up to a shared worth."*

*Soleri, Paolo, *Arcosanti*, Avant Books, San Diego, Ca., 1984.

ARCOSANTI - PAOLO SOLERI

FOOTNOTES

- ¹ "Paolo Soleri and the Counter Culture," Architectural Record, August 1974, pp. 121-126.
- ² Soleri, Paolo, *Arcosanti*, Avant Books, San Diego, Ca., 1984, p. 15.
- ³ *Ibid*, p. 16.
- ⁴ "Ecology," Progressive Architecture, June 1970, p. 180.
- ⁵ Soleri, Paolo, *Arcosanti*, Avant Books, San Diego, Ca., 1984, p. 29.
- ⁶ "Ecology," Progressive Architecture, June 1970, p. 180.
- ⁷ Soleri, Paolo, *Arcosanti*, Avant Books, San Diego, Ca., 1984, p. 25.
- ⁸ *Ibid*, p. 21.
- ⁹ "Paolo Soleri and the Counter Culture," Architectural Record, August 1974, p. 121.
- ¹⁰ Soleri, Paolo, *Arcosanti*, Avant Books, San Diego, Ca., 1984, p. 25.
- ¹¹ *Ibid*, p. 27.
- ¹² *Ibid*, p. 42.
- ¹³ *Ibid*, p. 64.
- ¹⁴ *Ibid*, p. 59.

CONCLUSIONS FROM PAOLO SOLERI PRECEDENT STUDY

It appears to me that what Paolo Soleri is recommending is condensing the cities and their populations but enlarging the croplands and even, at the expense of these "sometimes beautiful and inspiring marginal lands" (his words)"¹

I do agree with Soleri that once the city loses sustenance from the countryside the city is doomed. I do not agree with urban sprawl into the farm lands but as we concentrate our technology into the complexity and verticality of cities shouldn't we use technology to increase productivity of the farm lands which ultimately provides us with more natural untouched land to experience and enjoy?

I once drove through Utah and thought why don't we build cities on these seemingly good for nothing lands? We could asphalt over them rather than the valleys of California. Today I realize that we have cities in definite spots on the maps for reasons. They already exist and if we can compact them and increase farming productivity we may be able to save our remaining untouched lands and even return some lands to nature. Why can't we rebuild cities on land where previous developers have already destroyed the ecology?

Upon reading *Arcosanti* I realize that all of Soleri's views and points are agreeable and seem like worthwhile goals, but to me they only work when looked at in the sense of a single city and not on a global scale.

¹ Soleri, Paolo, *Arcosanti*, Avant Books, San Diego, Ca., 1984, p. 19.

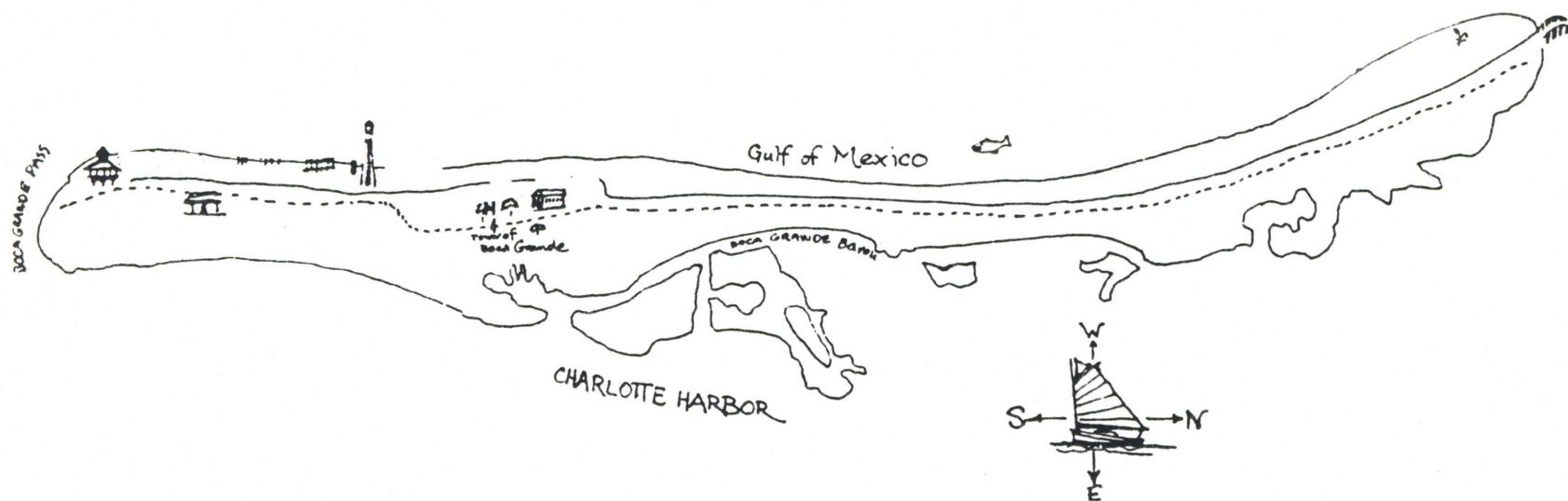
A goal of *Arcosanti* is to reinstate family encounters--a short walk to grandma's house. I love the thought but recognize the reality. Is one of these small cities to become a related family eventually? How do you stop one son from moving to another place and marrying in another city? How do you begin the population of the next contained city? I still see commuting going on now between these pods or nodes. Only a few within this population (as in the older parts of our present cities) will have the advantage of family and work in close proximity.

I see the problem of contained or optimum communities as a loss of freedom. What of the family that wants to live within a certain community whose quota is filled? Imagine a world with beehive cities on it (like warts instead of fungus) and is this not a lower level of evolution than what exists in our cities today, even with all the problems? It is still a matter of time until the warts are forced closer and closer together becoming

a fungus, because as I see it, all the problems would eventually exist again. Do we control population? Do we assign people to a city and to a job?

I believe our cities must be compact, complex (demanding miniaturation) and vertical. Green spaces and natural lands must be accessible to the inhabitants. Rapid transportation of goods and people is the spine of the modern city--a spine made of a network of nerves and vertebra.

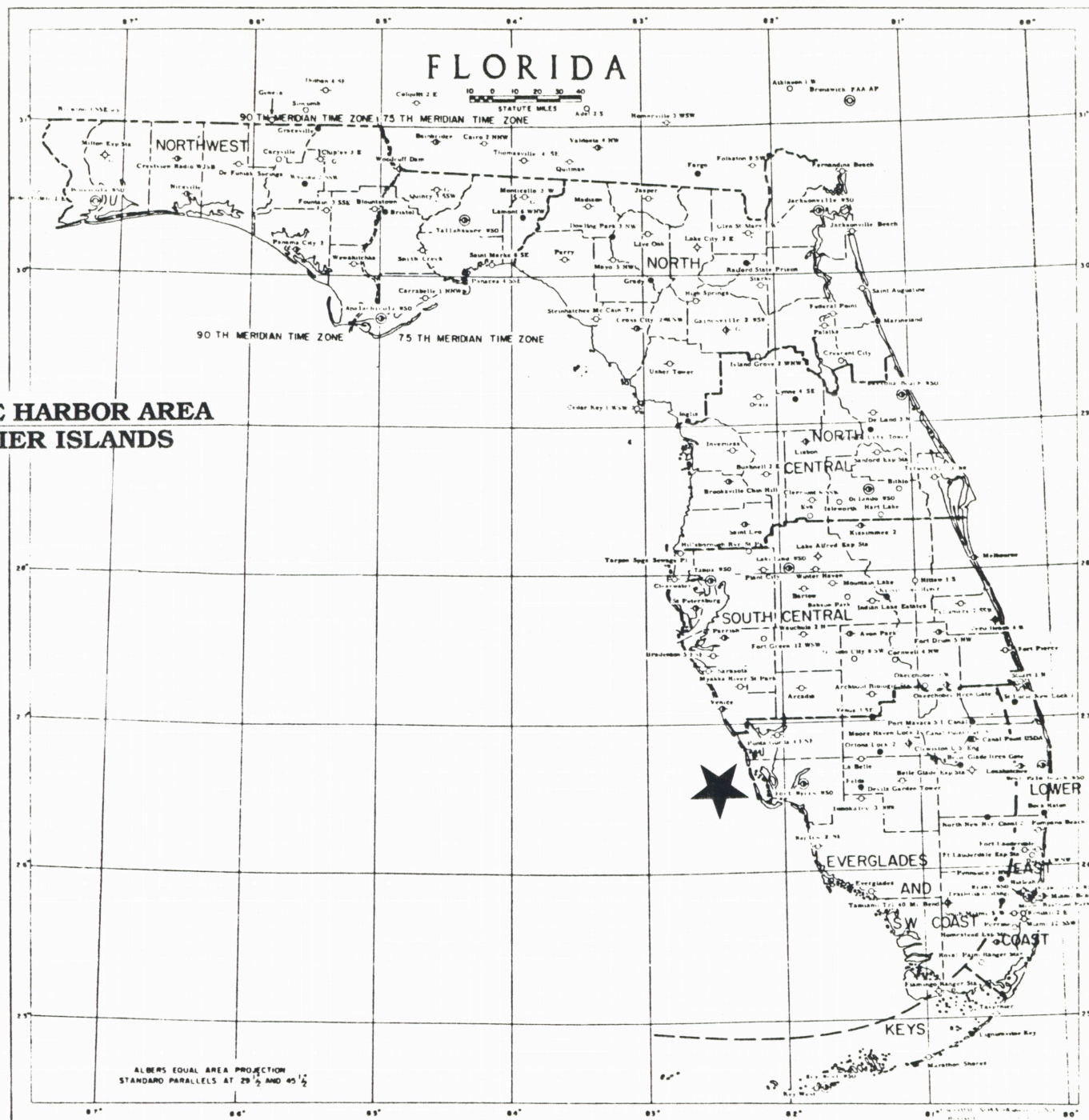
If the city is to be thought of as a living organism is it not true in nature that living organisms experience metamorphosis and mutations. Although sometimes these have negative effects and the organism dies it can also have the right effect (or result) and proves to be what saves the species from extinction. Change occurs at the critical point and nature provides the way.



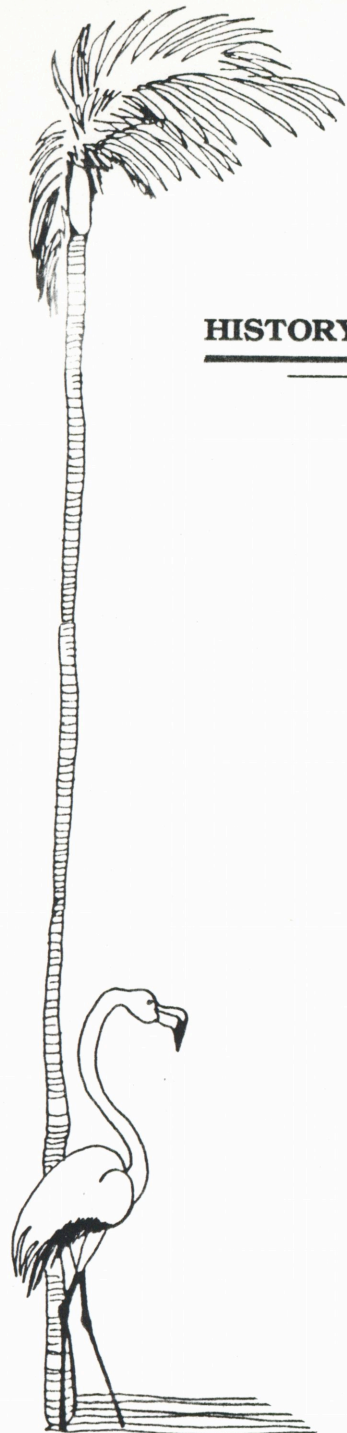
Boca Grande

Gasparilla Island, Florida

**CHARLOTTE HARBOR AREA
WITH BARRIER ISLANDS**



HISTORY



HISTORY OF GASPARILLA ISLAND

Gasparilla Island is one of a chain of islands which forms a barrier chain protecting Charlotte Harbor and the mainland from hurricanes. The barrier chain consists of six islands which are (from north to south) Little Gasparilla, Gasparilla, Cayo Costa (also referred to as Lacosta), North Captiva, Captiva and the southernmost and largest in the chain, Sanibel.

Gasparilla Island is located on the north side of Boca Grade Pass which has always been the deepest entrance into Charlotte Harbor. The Spanish Dominicans had a mission known as "Antonia" located in 1565 somewhere within Charlotte Harbor and there appears to be considerable evidence that the mission, as well as a fort, may have been on Gasparilla Island.¹

Documents and charts indicate that Gasparilla Island was named sometime during the late 18th Century, probably after Friar Gaspar, a Catholic priest.²

After the Spanish missions were established the area was used by Cuban fishermen as a place to stop and dry their fish. In 1770 it was reported that one thousand tons of dried fish were shipped from the western shore of East Florida to Havana and that 300 to 400 men were employed in the fishery from September through March.³

Early historical accounts of the area indicate that Spanish fishermen were on good terms with the local Indians and that most of the existing populations on the islands contained Indian-Spanish mixtures.⁴

The English took possession of Florida from the Spanish in 1763 and at that time there were about 380 remaining Indians who had survived from an original Indian population of more than 25,000 only a century earlier. The Calusas were one of the Florida aboriginal groups which were nearly exterminated through disease and slave raids between 1650 and 1763.. A band of Creek Indians began migrating southward into north Florida around 1760 and they were named "Seminoles," meaning "wild people," by John Stuart, a British Indian agent. The Seminoles preferred living in isolation from the white man. They opposed breeding with or even working on an equal basis with the white man.⁵ However, the Seminoles did not apply this reverse racial prejudice to the Negro whom, while not considering the Negro to be an equal, they were willing to interact with on an economic basis.

There was one isolated band of Indians who migrated further south than the other groups and it was this group who did co-mingle with the whites. These Indians befriended the Cuban fishermen and there developed a lucrative trade between the two groups. The Indians traded furs and live birds in wicker cages in exchange for guns, ammunition and liquor. The trading developed into a steady commerce upon which the Indians became dependent. As their dependence grew upon the whiteman so did their subservience. Indian men began hiring out as fishermen under the direction of Cuban supervisors. The Indian women soon began to socially interact with the Cubans and, although few of these liaisons were formalized by religious marriages, children were born from Indian women impregnated by Cubans.

By 1750 the population of Charlotte Harbor included a number of mix-blood children and the Indians were being referred to as "Spanish" or "Rancho" Indians. In 1783 England deeded Florida back to Spain. This tended to make the Cuban fishing industry more permanent and legitimized the Indian trade which had been occurring illegally.⁶

An early U. S. Customs agent who was stationed within Charlotte Harbor described the Cuban fisherman as being of the roughest type of person "many of whom were refugees of Spanish law."

The only Cuban living in the area who was referred to by name between 1784 and 1836 was Jose Caldez who appears to have been the unofficial governor of the area.⁷ It has been speculated that Caldez was the principle agent for the Havana House of Bardias, the controlling force behind the Cuban fishing business in Charlotte Harbor. In 1821 the United States took possession of Florida and the smuggling of guns, ammunition and liquor became a mounting problem.

In 1824 U.S. Army Capt. Isaac Clark visited Charlotte Harbor and found three fisheries which employed 43 Spaniards and a few Indians.⁸ From 1824 through the early 1830s U.S. explorers made several trips into Charlotte Harbor and reported several settlements of Spaniards and Indians. As American citizens became envious of the fishing industry in the Charlotte Harbor area increased pressure was put on the government to rid the area of the smugglers. In 1832 Customs Commissioner George Willis was assigned to Charlotte Harbor but he became disenchanted with the post and after one year Dr. Henry Crews was appointed to Willis' post. Crews immediately began watching Jose Caldez whom he suspected of being the leader of the smugglers. While there were many disagreements between Crews and Caldez, Crews was not able to prove that Caldez was involved in any wrongdoing.

In 1835, 108 U.S. soldiers were ambushed by Seminoles and all but three were killed.⁹ A dozen isolated attacks against homesteads in north and central Florida quickly followed. The Navy dispatched the USS Vandalia from the base at Pensacola, Florida. Along with other naval forces and U.S. Army troops and Marines, all converged on Tampa Bay. A three-column advance of soldiers southward was designed to drive the Seminoles out of central Florida. The government forces were able to drive out or roundup the dissident Indians, most of whom were later shipped west. Some of the Seminoles apparently slipped out to Cuba and then later returned to Charlotte Harbor on Cuban fishing boats.

In 1836 U. S. forces explored Sanibel Island and most of the remainder of Charlotte Harbor.¹⁰ With a few exceptions all of Charlotte Harbor was uninhabited. In 1844 U. S. Adjutant General Lorenzo Thomas recommended no settlement of any kind be allowed within Charlotte Harbor as a result of the discovery that two American whiskey traders were operating within the upper limits of Charlotte Harbor. That prohibition apparently was in effect until 1847 but by 1849 some of the fishing activity started again.

In 1863 a chart was drawn based upon surveys conducted in 1859 and 1860 and the only buildings shown on the chart were those of a ranch located on Cayo Costa Island. Other buildings were known to be present on the other islands but it is thought that they were probably in such a state of deterioration that they were considered unusable.¹¹

During the Civil War years bands of partisans calling themselves Confederate "Irregulars" ranged throughout Florida. These partisans sent non-aligned Floridians scattering and some of the non-partisans found themselves on the barrier islands within Charlotte Harbor.

Union forces formed a blockade of Charlotte Harbor during the fall of 1863 and many Confederate ships were captured while trying to run the blockade with their cargos of salt, one of the most critical commodities for the Confederacy!² There was such a salt famine in the Confederacy from 1861 to 1863 that prices rose to \$200 for a 2-bushel sack of salt. Confederate forces exported beef on-the-hoof to Cuban markets during the Civil War. The cattle trade with Cuba provided the only cash crop which resulted in hard currency.

The official U.S. Census of 1870 shows a total of eight persons, all with the surname of Santini, residing on Cayo Costa. Four other persons were shown to be living on two of the smaller islands, Guiseppe and Cayo China!³

During the last half of the 1870s a U.S. government survey was conducted of the fishing industry in the southern states. The survey, called the Goode Report, showed immense schools of mullet in Charlotte Harbor. The report went on to describe the soil as being generally good, the climate almost unexcelled, plenty of fish and game "but settlers find the constant presence of tormenting insects and the extreme seclusion unbearable."⁴

John R. Peacon, Peacon Brother's fishery, was the first person granted a homestead on Gasparilla Island. The Peacon family had arrived on the island some time before 1877. At the time the island abounded with native bird life, fish, wild fowl, hogs and deer. The climate was healthy and diseases, such as malaria and yellow fever, were absent from the area except for Key West. There was social contact between the residents of Cayo Costa and Gasparilla and there was both social and business contact between those islands and Key West and Cuba.¹⁵

In 1848 a military reservation was established at the northern end of Cayo Costa. A Congressional Act, passed in 1882, formally placed the property under the ownership of the U.S. War Department. The reserve was formed to hold the island for future military needs, whatever those might be.¹⁶

In 1876 or thereabouts Tariva Padilla moved his family from Key West to Cayo Costa and settled illegally on the military reservation. The Padilla family came to be known for dealing in smuggled liquor and providing "entertainment" for Cuban fishermen. In 1901 the government raided the island, arrested and convicted Padilla and his wife and evicted them from the military reservation.¹⁷ In 1902 the government destroyed all of the facilities used and occupied by the Padillas. In a year or two the Padilla family returned to Cayo Costa but settled south of the military reservation line.¹⁸

The Charlotte Harbor area changed dramatically after the discovery of phosphate up the Peace River in 1887 because of the importance of the chemical as a fertilizer. At that same time the railroad reached Punta Gorda. Coincidentally, at about the same time, yachtsmen began to discover the harbor and began to winter there and cruise through the islands between Fort Myers and Punta Gorda. In 1899 an ice plant was built near the rail head at Punta Gorda. Previously, fish could be preserved only by salting and drying. The ice plant provided the means of shipping fresh fish to northern markets for the first time. Three new fish companies established fish buying houses throughout Charlotte Harbor.¹⁹

In 1910 a hurricane hit Charlotte Harbor with such force that it capsized a number of fishing boats and killed about 48 Cuban fishermen. The only survivor was a young boy.²⁰

By 1911 the south end of Gasparilla Island was booming with a phosphate terminal being constructed at South Boca Grande. At the center of the island, a new village, Boca Grande, had developed almost overnight. ²¹

In 1914 the Charlotte Harbor and Northern Railroad, a subsidiary of American Agricultural Chemical Company (A.A.C. Co.), encouraged the building of an ice fishery at Gasparilla Island's north end in an attempt to develop additional business for the rail line. The railroad had first moved onto the island in 1907. In 1916 sixteen new fishermen's houses were built on the north end of Gasparilla Island.

By 1920 Gasparilla Island was prospering. Boca Grande was now in its second decade and was home of the Gasparilla Inn which was managed well and had the status associated with the upper class. Gasparilla Island also had a fine sandy beach favored by the winter visitors. At that time the Gasparilla Inn was owned by the AAC Co. which also controlled the Boca Grande Land Company, later renamed the Boca Grande Corporation. The AAC Co operated the phosphate terminal at South Boca Grade through a subsidiary, Charlotte Harbor and Northern Railroad. Consequently, AAC Co. controlled the island at that time. ²²

In the early 1930s the part of the military reservation which was not in railroad use was purchased by Joseph Spadero who built the Boca Grande Hotel which immediately stole business from the Gasparilla Inn. The Boca Grade had a relaxed dress code while the Gasparilla Inn remained the gathering place for those of "discriminating values" who became known locally as the "beachfronters." ²³

The Gasparilla Inn remained open during World War II as did the Boca Grande, but with reduced facilities. The fishing came to a halt and most of the guides went into the military. In 1942, however, many of the guides were released from the service because commercial fishing was considered as essential to the war effort. ²⁴

When the war ended in 1945, an increased number of privately-owned and operated sportsfishing boats appeared in Charlotte Harbor when fishermen realized it was cheaper to own and operate a boat than to hire a guide and boat.²⁵

The history of Boca Grande, the village, is closely related to phosphate rock which, in the 1880s was discovered a few miles south of Arcadia on the banks of the Peace River. Mining was begun and in 1894 Peter Bradley, owner of the Bradley Fertilizer Works of North Weymouth, Massachusetts, purchased stock in the Peace River Phosphate Mining Company. At that time the mine could be reached only by driving in a carriage from Arcadia which was served by the Atlantic Coast Line Railroad.²⁶

The Bradley family also owned the American Agricultural Chemical Company which was organized in 1899. When a higher grade phosphate rock was discovered 40 miles west of Tampa, the Peace River Phosphate Mining Company felt that a better method of shipping their product had to be found if they were to compete successfully with the new mine at Mulberry, Florida. Peace River management decided the company would build a deep water terminal and carry the rock to it by railroad. This would put the Peace River phosphate 125 miles nearer to the fertilizer plants on the Atlantic Seaboard. A charter of a non-existent Florida railroad was secured and it authorized the construction of a railroad from Gasparilla Island across the water of Charlotte Harbor through DeSoto, Manatee, Polk and Hillsboro counties to a point near Lakeland or Plant City, Florida. In 1905 surveying and construction of the railroad was begun. The north end of Gasparilla Island was separated from the mainland by 1 5/8 miles of harbor. This required a trestle and two drawbridges over the two channels leading from the harbor to the Gulf of Mexico. The financing for the railroad came from a variety of sources including Peace River Phosphate Mining Co. and A. A. C. Co.

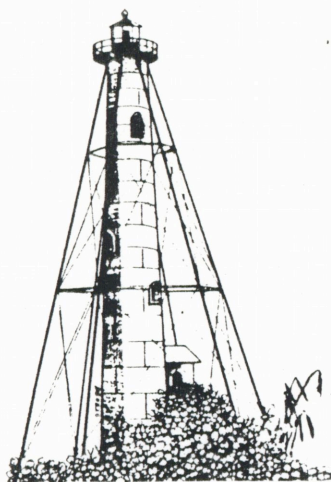
The railroad construction was completed in 1908 and at that time there were three settlements on Gasparilla Island: a group of fishermen's huts on the north end; Boca Grande where the railroad staff and workmen lived; and South Boca Grande where the phosphate terminal construction workers lived.²⁷

The 1910 hurricane destroyed a portion of railroad embankment and in 1912 a hurricane destroyed a concrete bathhouse which had been constructed on the Gulf beach.

One of the main problems at Boca Grande was the lack of fresh water. The only fresh water available was that trapped in large wooden tubs during a rainstorm. A series of artesian wells were dug at Boca Grande and South Boca Grande.

The Gasparilla Inn was constructed and open for business in 1912-13. A casino was also built near the hotel, as well as a boathouse and greenhouse. In 1914 the water problem became acute because none of the artesian wells, some of which were as deep as 1200 feet, had produced any fresh water. Fresh water was being hauled from a stream 37 miles away by tank car. In 1924 a major effort was made to sell property to wealthy people for winter homes in the hope that the A. A. C. Co. would be able to recover some of its development money. The railroad line was relocated back away from the Gulf front in order to gain more waterfront lots and also to protect it from being washed out every time there was a high wind.²⁸

By 1925 more and more people were becoming disenchanted with their Palm Beach homes and wanted a more quiet atmosphere and a warmer climate. This feeling made Boca Grande, located directly across the state from Palm Beach, a desirable place for many Floridians. At this time beach erosion had also become a serious problem which had to be confronted. The land owners banded together to solve the problem of erosion by building some protective walls.²⁹



In 1926 the government military reservation was sold to Joseph Spadero, owner of the Boca Grande Hotel. Throughout this period the A.A.C. Co. sold various parcels of land to a number of individuals until finally, in December 1945, the remaining land and lots on the island were sold to H. L. Schwartz, a wealthy oil distributor from New York City. Just 40 years after the landing of the railroad construction crew the A. A. C. Co. no longer owned anything on Gasparilla Island.

Gasparilla Island of 1987 reveals a phosphate dock which has long since been shutdown. Most of the railroad track has been removed from the island. The population ranges from a low of 700 persons to a seasonal high of 2,000. There currently are 35 school-age children who are bused off the island to schools in Rotonda.³⁰

Gasparilla Island is located in two counties: the north tip of the island is in Charlotte County and the south and major portion is in Lee County. There are approximately 90 businesses owned and operated on the island. The island has a central sewage and public water supply. There are no septic tanks and no wells.

HISTORY OF GASPARILLA ISLAND

FOOTNOTES

- ¹ Gibson, Charles Dana, *Boca Grande: A Series of Historical Essays*, Great Outdoors Publishing Co., 1982, p. 13.
- ² Blunt, E. and G. W., *American Coast Pilot*, N.Y., N. Y., 1827.
- ³ Gibson, Charles Dana, *Boca Grande: A Series of Historical Essay*, p. 13, 14.
- ⁴ *Ibid*, p. 14.,
- ⁵ *Fifth Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution*, 1883-1884.
- ⁶ Gibson, Charles Dana, *Boca Grande: A Series of Historical Essays*, p. 16.
- ⁷ *Ibid*, p. 17.
- ⁸ *Ibid*, p. 19.
- ⁹ *Ibid*, p. 25.
- ¹⁰ *Ibid*, p. 28
- ¹¹ *Ibid*, p. 31.
- ¹² *Ibid*, p. 38.
- ¹³ *Ibid*, p. 40.
- ¹⁴ *Ibid*, p. 46.
- ¹⁵ *Ibid*, p. 47.
- ¹⁶ *Ibid*, p. 50.

- 17 Punta Gorda *Herald*, January 24, 1902.
18 Gibson, Charles Dana, *Boca Grande: A Series of Historical Essays*, p. 51.
19 *Ibid*, p. 55.
20 *Ibid*, p. 59.
21 *Ibid*, p. 61.
22 *Ibid*, p. 67.
23 *Ibid*, p. 67.
24 *Ibid*, p. 67.
25 *Ibid*, p. 68.
26 *Ibid*, p. 119.
27 *Ibid*, p. 120.
28 *Ibid*, p. 124.
29 *Ibid*, p. 129.
30 Letter dated November 29, 1987 from Dave Howell, Boca Grande Area Chamber of Commerce, Boca Grande, Florida.

CONCLUSIONS FROM HISTORY SURVEY

One early importance of the Charlotte Harbor area was the fish it provided for Cuban fishermen. Removal of the natural estuarine growth (north harbor where rivers flow in) has resulted in a sharp curtailment of fishery resources, birds and other wildlife.

In 1821, the United States took possession of Florida. For some time the area was a problem because of smugglers and the Seminole Indians. About 1835 the U. S. Government forced out most of the Seminoles and the Spaniards. In 1836 the harbor was mostly uninhabited.

The settlement history of Gasparilla remains consistent even today. Settlement has been slow or nonexistent because of isolation, the land was low, and insects. The insect problem has been overcome in recent years but the island is still isolated because of the lack of transportation. The one causeway at the north end of the island is limiting. No large trucks are able to cross the bridge because of weight limits. All materials must be barged to the island.

The shipping of phosphate was the only reason for the development of the now present town of Boca Grande. The company owning the railroad line tried to develop the island into an exclusive resort area but this attempt failed, I believe, because of fresh water problems and the isolation of the island.

The ecology of the nothern end (now a park area) and southern end of the island has remained moderately intact. There has been a drastic reduction of the hordes of fiddler crabs that once occupied the beaches. They were the basic food resource for fish, birds and mammals. Some dredging of the channel has occurred on the south end and because of government and then private holding of this land (by the Seaboard Coast Railroad) it remained untouched.

Real estate developers have destroyed a lot of the ecology of the middle portion of the island by dredging, removing mangrove growth and dumping the sand in areas to form bars along the narrows of the island. The streets of Boca Grande were lined with coconut palms, hibiscus, Australian pines and banyans in 1914. The planned unit developments of the 1970s (they are few on Gasparilla) provided insufficient space for native or introduced trees.

The phosphate shipping stopped in 1979 and the railroad tracks were abandoned in 1982. The Seaboard Coast Railroad land has remained undeveloped.

CLIMATE

Climate of Florida

Topographic Features - Florida, situated between latitudes 24 degrees to 30 minutes and 31 degrees North and longitudes 80 degrees and 87 degrees 30 minutes west, is largely a lowland peninsula comprising about 54,100 square miles of land area and is surrounded on three sides by the waters of the Atlantic Ocean and the Gulf of Mexico. Countless shallow lakes, which exist particularly on the peninsula and range in size from small cypress ponds to that of Lake Okeechobee, account for approximately 4,400 square miles of additional water area.

No point in the state is more than 70 miles from salt water, and the highest natural land in the Northwest Division is only 345 feet above sea level. Many small islands dot the shorelines.

A large portion of the southern one-third of the peninsula is the swampland known as the Everglades. Stream gradients are slight and often insufficient to handle the runoff following heavy rainfall. Consequently, there are sizable areas of swamp and marshland near these streams.

Soils are generally sandy and low in natural fertility, the main exception being a large area of peat and muck soils in the Everglades. About one-third of Florida's soils can be classified as uplands or ridge soils that are generally well to excessively well-drained. Soils in the remaining two-thirds of the state, including the muck soils, generally have imperfect to very poor natural drainage. Large areas of Florida are underlain by compact subsoils that intensify the effects of both wet and dry weather.

General climatic features - General climatic conditions range from a zone of transition between temperate and subtropical conditions in the northern interior portion of the state to the tropical conditions found on the Florida Keys.

Summers are long, warm and relatively humid; winters are mild because of the southern latitude and relatively warm adjacent ocean waters. The Gulf Stream, which flows around the western tip of Cuba, through the Straits of Florida, and northward along the lower east coast, exerts a warming influence to the southern east coast largely because the predominate wind direction is from the east.

Florida enjoys abundant rainfall except for the northwestern portion of the state where the average year can be divided into two seasons -- the rainy season and the long, relative dry season. On the peninsula, generally more than one-half of the precipitation for any average year can be expected to fall during the four-month period, June through September.

Temperature -- Mean annual temperatures range from the upper 60s in the northern portions of the state to the middle 70s on the southern mainland, but reach to nearly 78 degrees at Key West. summertime mean temperatures are about the same throughout the state, 81 degrees to 82 degrees; during the coolest months, temperatures average about 13 degrees lower in northern than in southern Florida. July and August temperature averages are the warmest in all areas, and December and January temperature averages are the coolest in the northern and central portions of the state. January and February, on the average, are the coolest months in the extreme south and on the Keys.

Maximum temperatures during the warmest months average near 90 degrees along the coast and slightly above 90 degrees in the interior; minimal average in the low 70s. In May and September, 90 degrees or higher can be expected about one day in three in the northern interior and about one day in two in the southern interior. Temperatures of 100 degrees or higher are practically unknown in southern Florida.

A tropical climate is defined as one in which the average temperature of the coldest month is 64.4 degrees or above. The climate found in Florida along the east coast from Vero Beach southward and along the west coast from Punta Gorda southward fits that definition.

During the warm season, sea breezes are felt almost daily within several miles of the coast and occasionally 20 to 30 miles inland. Thunderstorms, which on the average occur about one-half of the days in summer, frequently are accompanied by as much as a rapid 10 degree to 20 degree drop in temperature. Gentle breezes occur almost daily. Because most of the large-scale wind patterns affecting Florida have passed over water surfaces, hot drying winds seldom occur.

Minimum temperatures during the coolest months range from the middle 40s in the north to the middle 50s in the south and no place on the mainland is entirely safe from frost or freezing. Cold waves, however, rarely last more than two or three days at a time.

Winters with more than one severe cold wave, interspersed with periods of relative warmth, are especially distressing to the agricultural industry.

Precipitation -- Rainfall averages range from about 50 to 65 inches. Highest annual rainfall is measured at stations in the extreme northwestern counties and in the southern end of the peninsula. Many localities have received more than 80 inches in a calendar year, and a few stations have measured more than 100 inches. In contrast, almost all localities have received less than 40 inches in a calendar year.

In the summer rainy season there is close to a 50-50 chance that some rain will fall on any given day. In the remainder of the year rain is likely to fall on one or two days in a week.

The rainy season has begun as soon as early May and has been delayed as late as the end of June. Late September or early October usually marks the end of the wet season.

Many of Florida's reporting stations average more than 80 thunderstorms a year. Rain is often heavy but usually lasts only one or two hours, generally near the hottest part of the day. Day-long summer rains are usually associated with tropical disturbances and are infrequent. Even during the wet season the rainfall duration is generally less than 10 percent of the time.

Occasionally, tropical storms produce copious rainfall over relatively large areas. A detailed survey of the September 1950 hurricane indicated an amount close to 34 inches fell in a 24-hour period within the vicinity of Cedar Key. The 38.70 inches of rainfall that fell during that 24-hour period at Yankeetown on September 5-6, 1950, during this hurricane is the record 24-hour rainfall for the nation.

Droughts -- Florida is not immune from drought, even though annual rainfall amounts are relatively large. Prolonged periods of deficient rainfall are occasionally experienced even during the time of the expected rainy season. Several such dry periods, in the course of one or two years, can lead to significantly lowered water tables and lake levels that depend upon leaks and shallow wells for their water supply.

Because a large part of the state's agricultural produce is planted, grown and marketed during fall, winter and spring (normally the driest part of the year), growers of high-per-acre -value crops have long concluded that it is almost mandatory to provide supplemental irrigation for crop success. The flat topography of the area where many of these crops are grown is well suited to subsurface irrigation by water table control. However, heavy rains can occur during these growing seasons, and growers have found it necessary to provide for water-removal facilities in addition to those for irrigation.

Snow -- Snow in Florida is unusual but not unheard of and snow traces have been reported as far south as Fort Myers.

Wind -- Prevailing winds over the southern peninsula are southeast and east. Over the remainder of the state, wind directions are influenced locally by convectional forces inland and by the land-and-sea-breeze effects near the coast. Consequently, prevailing directions are somewhat erratic, but, in general, follow a pattern from the north in winter and from the south in summer. The windiest months are March and April.

Tornadoes, funnel clouds and waterspouts also occur on the average of 10 to 15 per year. Tornadoes may occur in any season but are most likely in spring and in connection with tropical storms. Florida tornado paths are generally short and damage has not been extensive. Waterspouts occasionally come inland but they normally dissipate soon after reaching land and affect only very small areas.

Tropical storms -- Florida, which juts out into the ocean between the subtropical Atlantic and the Gulf of Mexico, is the most exposed of all states to tropical storms which often produce high winds and are destructive. Hurricanes, in particular, can approach from the Atlantic Ocean to the east, from the Caribbean Sea to the south, and from the Gulf of Mexico to the west.

The average number has been 1.7 tropical storms in a year but in any individual year there may be as many as five. The state has never gone more than two years without a tropical storm.

Only 10 or 11 storms of hurricane intensity in 87 years have passed inland on the west coast in the area from Cedar Key to Fort Myers.

In early fall tropical storms normally approach the state from the east or southeast. In late fall the area of maximum hurricane activity shifts to the western Caribbean and most of the storms that move into Florida approach from the south or southwest, entering the Keys, the Miami area or along the west coast.

Winds of 150 miles per hour, which occasionally accompany major hurricanes, occur in Florida once in seven years on the average. The average hurricane rainfall in Florida usually does not exceed six to eight inches in a 24-hour period.

The climate of Florida is humid. Humidities range from about 50 to 65 percent during the afternoon to about 85 to 95 percent during the night and early morning hours.

Heavy fogs are usually confined to night and early morning hours in the late fall, winter and early spring. They occur on the average about 10 days a year or less over the southern portion of the state. They usually dissipate or thin soon after sunrise.

Florida is known as the Sunshine State and records show that the sun shines about two-thirds of the possible sunlight hours during the year, ranging slightly more than 60 percent of possible in December and January to more than 70 percent of possible in April and May. The length of day operates to Florida's advantage. In winter, when sunshine is highly valued, the sun can shine longer in Florida than in the more northern latitudes. In summer, the situation reverses itself with longer days returning to the north. While sunshine hours in Miami are 66 percent of possible in December as compared to 51 percent in New York City, greater difference is reflected in the amount of solar radiation that leads to temperature contrasts. New York City receives only an average 116 langleys (a unit of solar radiation) on a horizontal surface each day during December. In contrast, Miami receives an average of 317 langleys, almost three times as much solar radiation.

Air pollution does not often occur at any one place in Florida due to meteorological conditions. The air over the state is usually sufficiently unstable to disperse pollutants. This fact, plus the relative constancy of the easterly trade winds in southeastern Florida, greatly reduces the general pollution problem in the state.

Climate and economy -- Florida's economy generally depends upon agriculture, industry and tourism. The principal agricultural products are citrus and tropical fruits; truck crops; general farm crops such as tobacco, corn, peanuts, cotton, and small grains; nursery products; flowers; sugarcane; sweet and Irish potatoes; tun nuts; pecans; and honey and wax. The cattle industry is also important in the central and southern portions of the state because the long growing season produces forage production throughout most of the year. Food processing, the state's largest industry in terms of payroll, stems from a climate favorable to growing fruits and vegetables. The paper and pulp industry has found the long growing season enables the pine forest to renew more rapidly than in northern latitudes. The chemical and aircraft industries have found that the Florida climate permits plant operations to meet both indoor and outdoor operational requirements.

One of the most popular outdoor activities for both native Floridians and tourists is water recreation. Water temperature at Miami Beach ranges from 72 degrees in January to 89 degrees in July. The sea-surface temperature averages on the west coast of Florida range from 70 degrees in February to 84 degrees in August.

CLIMATIC DESIGN DATA

GASPARILLA ISLAND

CLIMATIC DATA

STATION: Fort Myers, Florida

Page Field - 1984

Standard Time: Eastern

Latitude: 26 35' North

Longitude 81 52' West

Elevation (ground): 15 feet

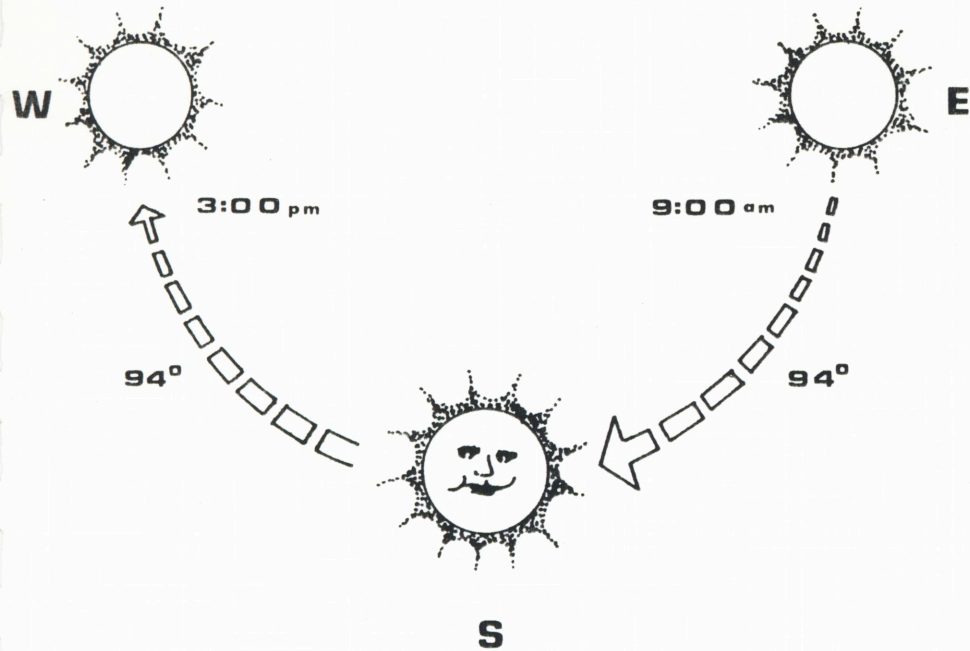
Source: Climate of the States

Gasparilla Island:

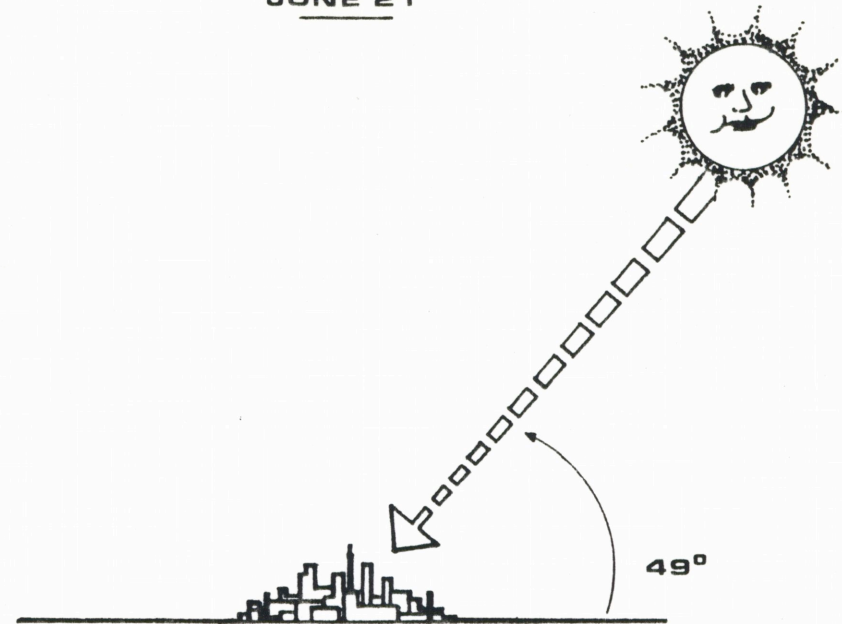
Latitude: 26 47' North

Longitude: 81 59' West

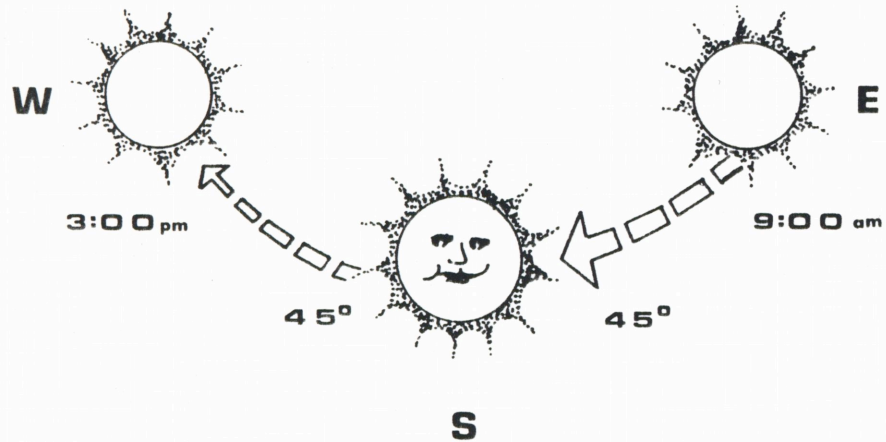
JUNE 21



JUNE 21

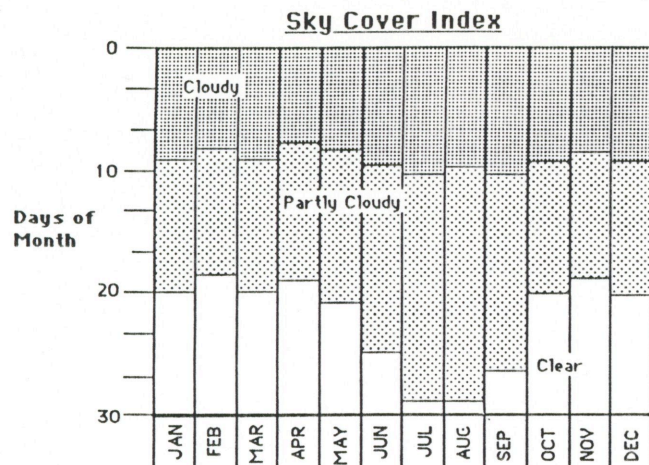


DEC 21

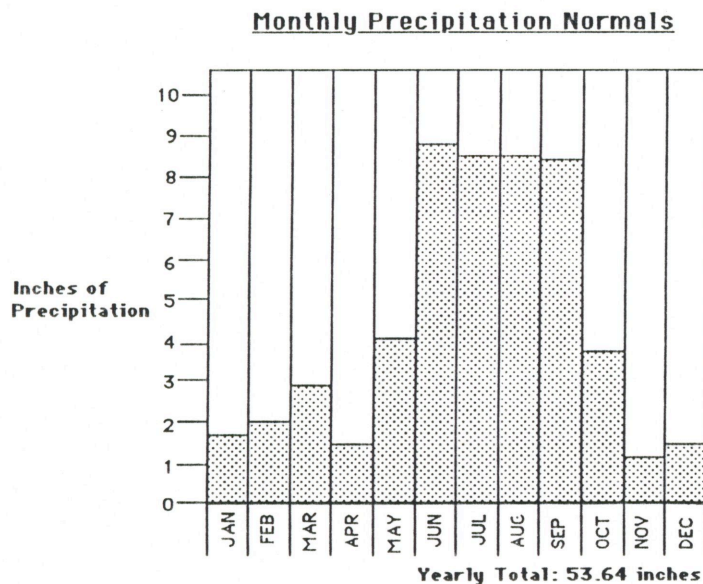


DEC 21



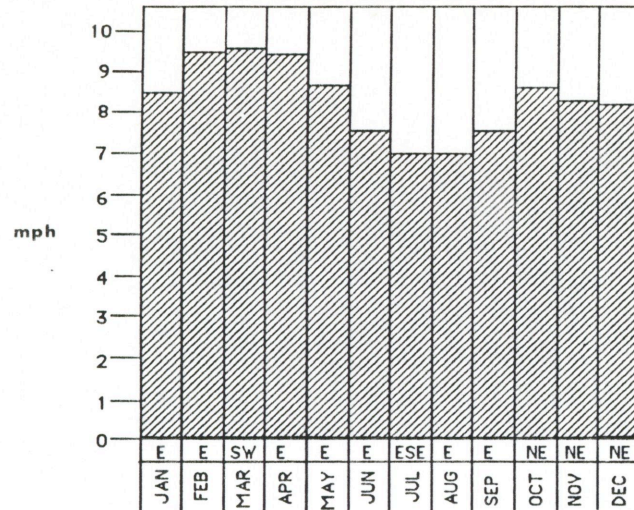


Number of clear days: 99
 Number of partly cloudy days: 165
 Number of cloudy days: 101



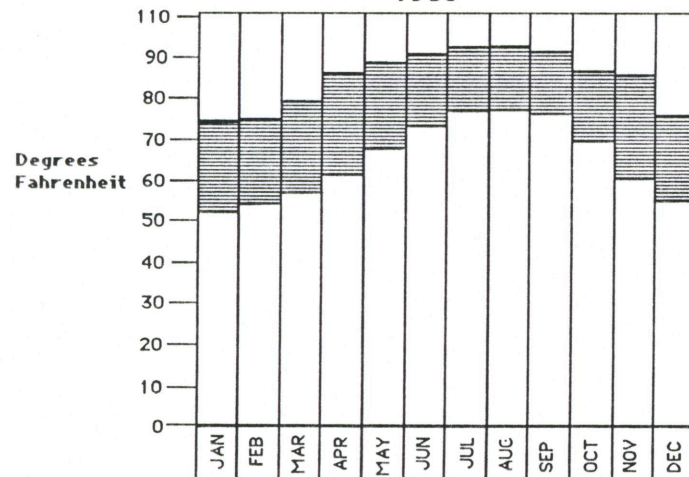
Maximum precipitation: 20.10 inches - June 1974
 Minimum precipitation: 0.0 - January 1950
 Maximum in 24 hours - 10.85 inches - October 1951
 Days with precipitation of one inch or more: 112
 Days with snow or ice pellets: 0
 Days with thunderstorms: 93
 Days with heavy fog: 21
 Days above 90 degrees: 106
 Days below 32 degrees: 0
 Last trace of snowfall - February 1899

Wind Speed and Direction



Yearly Average Wind Speed: 8.2 mph Easterly direction
Fastest Recorded Wind Speed: 92 mph, September 1960

Monthly Mean Temperatures 1983



Monthly Normal - 73.9 degrees
Record high temperature: 103 degrees, June 1981
Record low temperature: 26 degrees, December 1962

Yearly average: Max. 83.6
Min. 63.9

HURRICANES - GENERAL INFORMATION*

To be classified as a hurricane the storms must have winds in excess of 75 miles per hour. (Upper speeds to 150 miles per hour)

Season for Atlantic and Gulf Coasts is June to October.

Rate of movement forward is 5 to 15 miles per hour.

Storms range from 300 to 500 miles wide.

Circulation of air extends to elevations greater than 40,000 feet.

Storms are accompanied by tidal waves from 5 to 20 feet.

Eye of hurricane: Wind speeds reduce to approximately 15 miles per hour (calm is probably not reached) rain ceases, middle cloud deck vanishes, low clouds remain with the sun breaking through.

Eye passes usually within one hour.

After eye passes the sequence of events reverse - increased winds blow from the opposite direction of the first winds before the eye.

Dates of hurricanes hitting Gasparilla Island: 1910, 1921, 1925, 1944.

**Encyclopedia Americana*, Vol. 14, Grollier, Inc.,
Danbury, Conn., 1987, p. 613.

CLIMATE DESIGN

The winds are from the east in summer when the temperatures are highest so east-west air circulation is desirable. Summer temperatures are in the 80s and 90s so some air conditioning will be required. Very little winter heating is needed.

The area has had some recorded hurricanes (73 miles per hour or more wind,) however the fastest recorded wind in the Fort Myers area is 92 miles per hour (opposed to 150 miles per hour winds on the east coast of Florida.) These storms come from the southwest direction which will play a role in the design of the city. The rapid movement of people out of the city is necessary because of these infrequent storms.

The area has heavy rainfall periods and design must include rapid removal of this water.

The island will have clear days less than one-third of the year. The cloud cover is frequent in summer which is good and more sunshine appears in the winter months.

The sun angle is high in summer and low in winter. Because Gasparilla is elongated north-south the problem of shadows from tall buildings will not be so detrimental if grouped in the center and not spread out north and south.

ANALYSIS

COMMERCE OF CHARLOTTE HARBOR



The Charlotte Harbor area is mostly tourism and sport fishing, tarpon being the main attraction. No shipping of any importance takes place in the bay which is mostly used for pleasure boating.

Highway 41 and Interstate 75 run in a north-south direction around the harbor. The Seaboard Railroad is located a few miles inland and is not heavily used at present.

The land to the east of Interstate 75 is used for agriculture which is mostly citrus crops. To the southeast near Immokalee there is some truck gardening of vegetables which are shipped north to market. The cattle industry in Florida is centered north around Kissimmee.

Fuel oil used to be barged through the harbor and then sent up the Caloosahatchee River to power plants but is no longer barged.

The coastal towns along Highway 41 are mostly retirement communities. Tourism is their main industry.

SOUTHERN FLORIDA PENINSULA

COMPOSITE MAP

CANALS

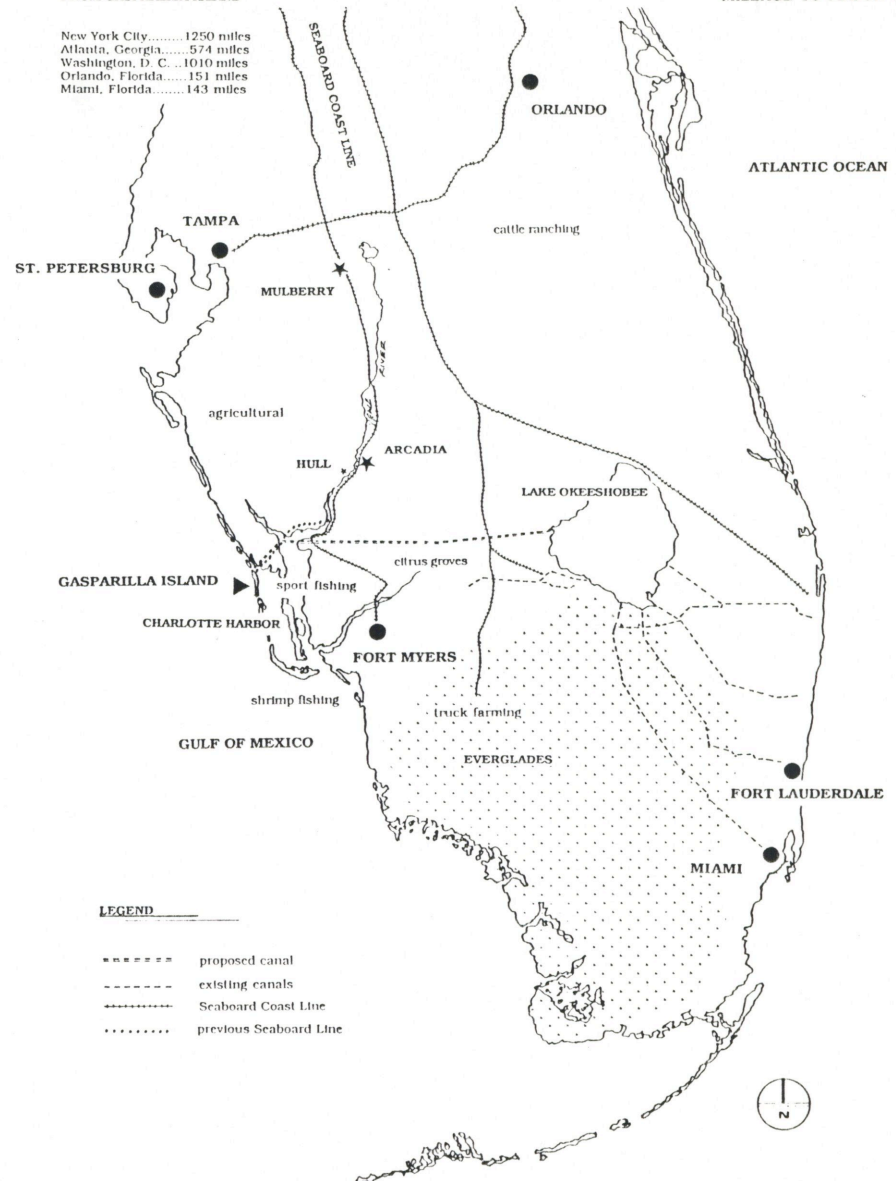
AGRICULTURE

RAILROAD LINES

MILEAGE TO MAJOR CITIES

MILEAGE TO MAJOR CITIES FROM GASPARILLA ISLAND

New York City.....1250 miles
Atlanta, Georgia.....574 miles
Washington, D. C.....1010 miles
Orlando, Florida.....151 miles
Miami, Florida.....143 miles



LEGEND

- proposed canal
- existing canals
- Seaboard Coast Line
- previous Seaboard Line

HISTORY OF GASPARILLA ISLAND TRANSPORTATION

1890 - First steamship service

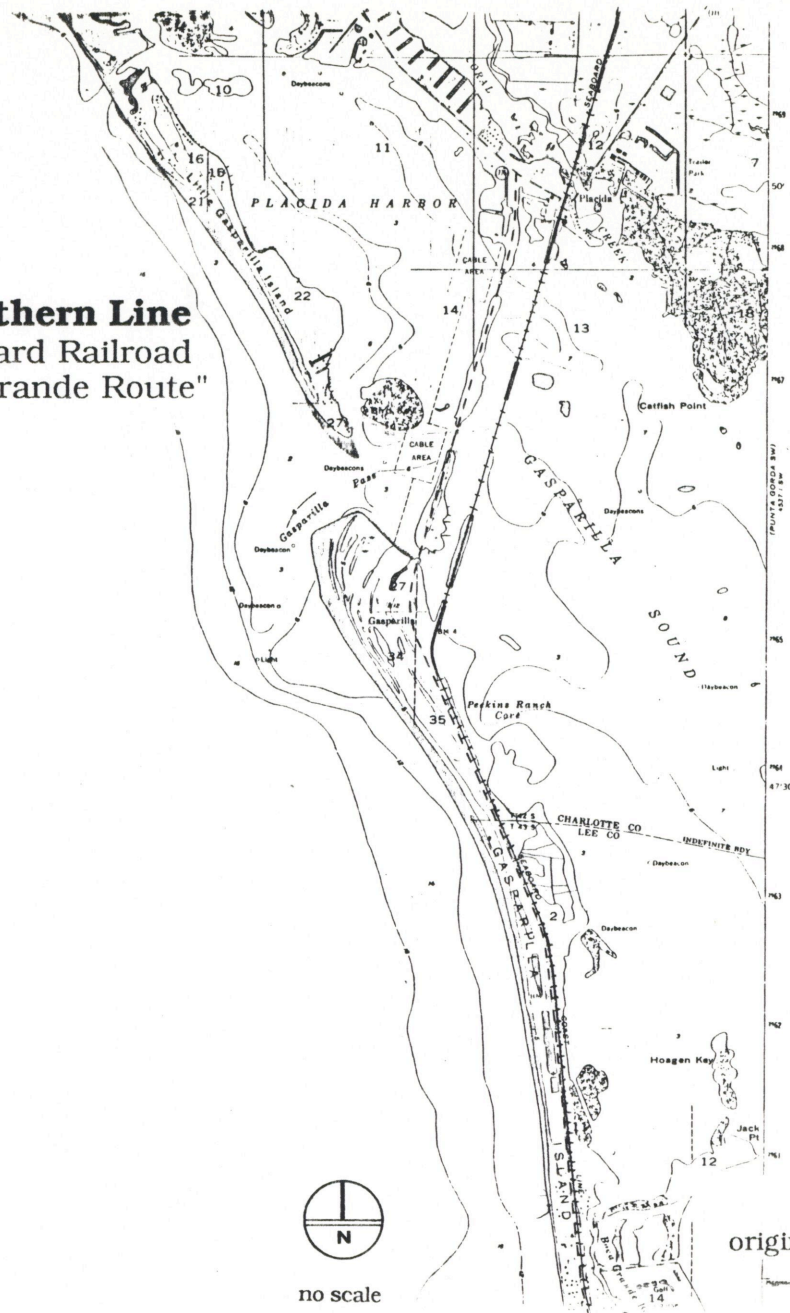
Lasted 12 years to 1906 and stopped when railroad was extended south to Fort Myers.

1906 - Passengers were transported by "run boats" which were servicing the harbor's fishery.

1929 - Gasparilla's first ferry (Catherine) began service.

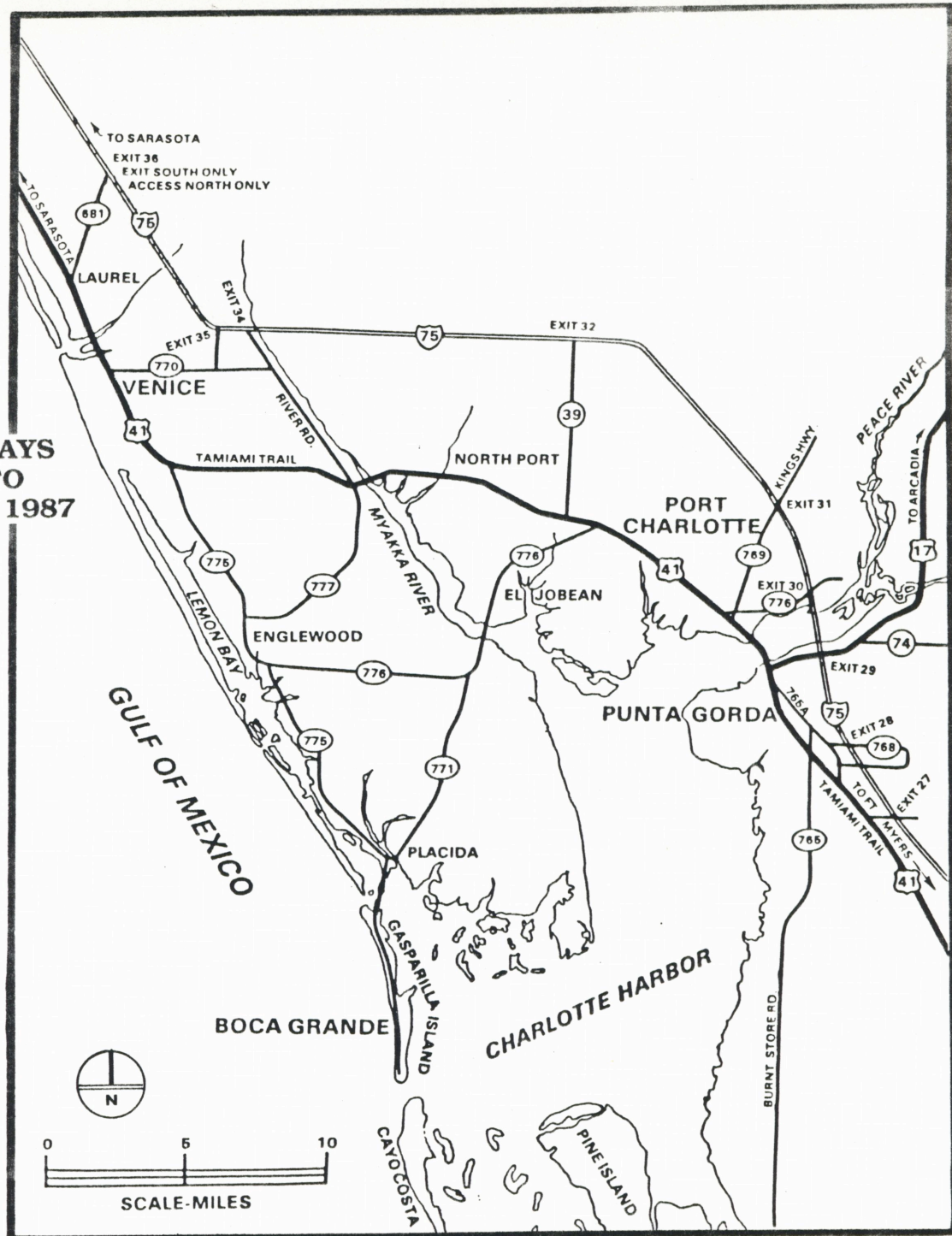
Late 1950s - Causeway was built.

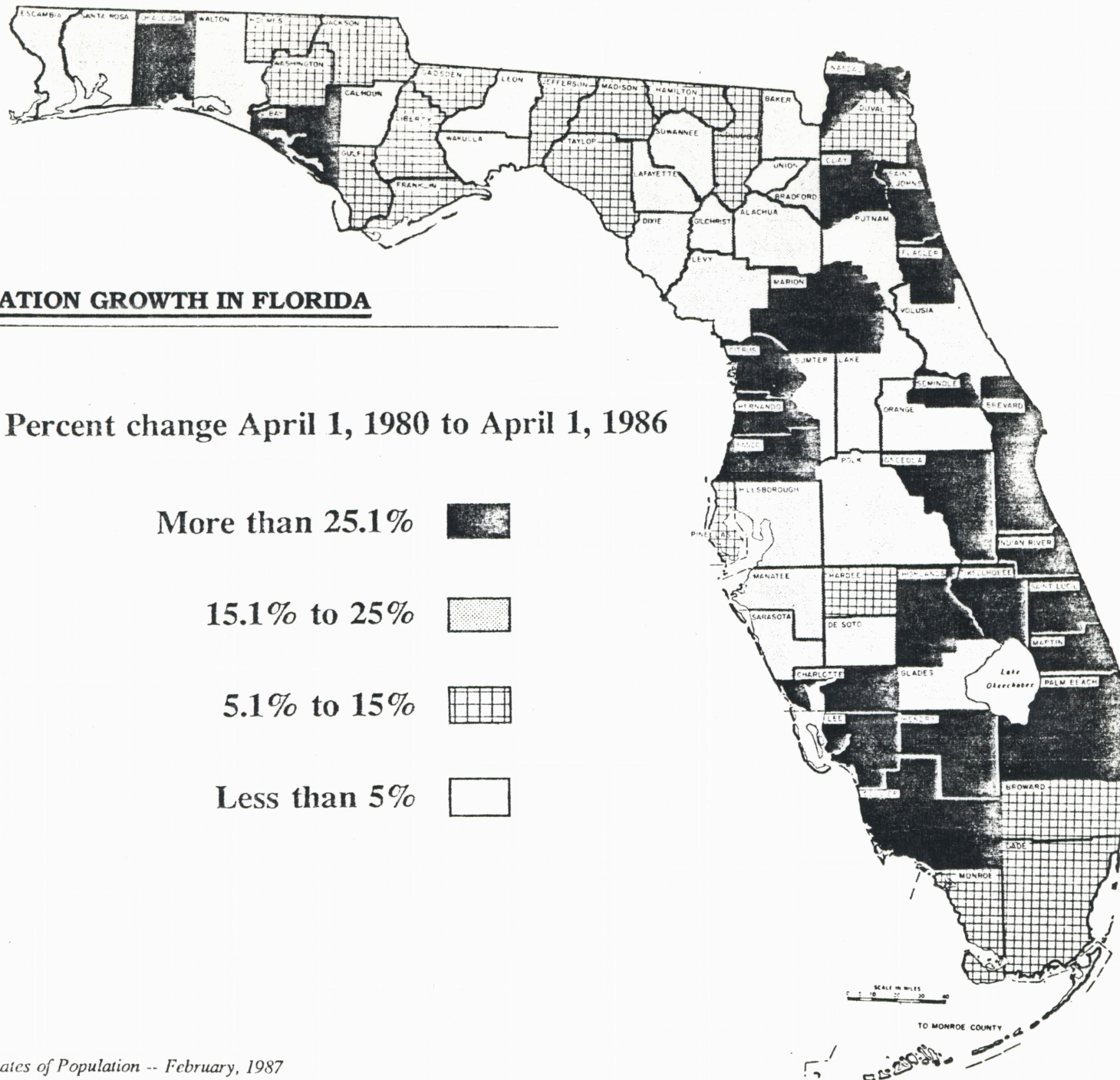
The Charlotte Harbor & Northern Line
 Later leased by the Seaboard Railroad
 and renamed the "Boca Grande Route"



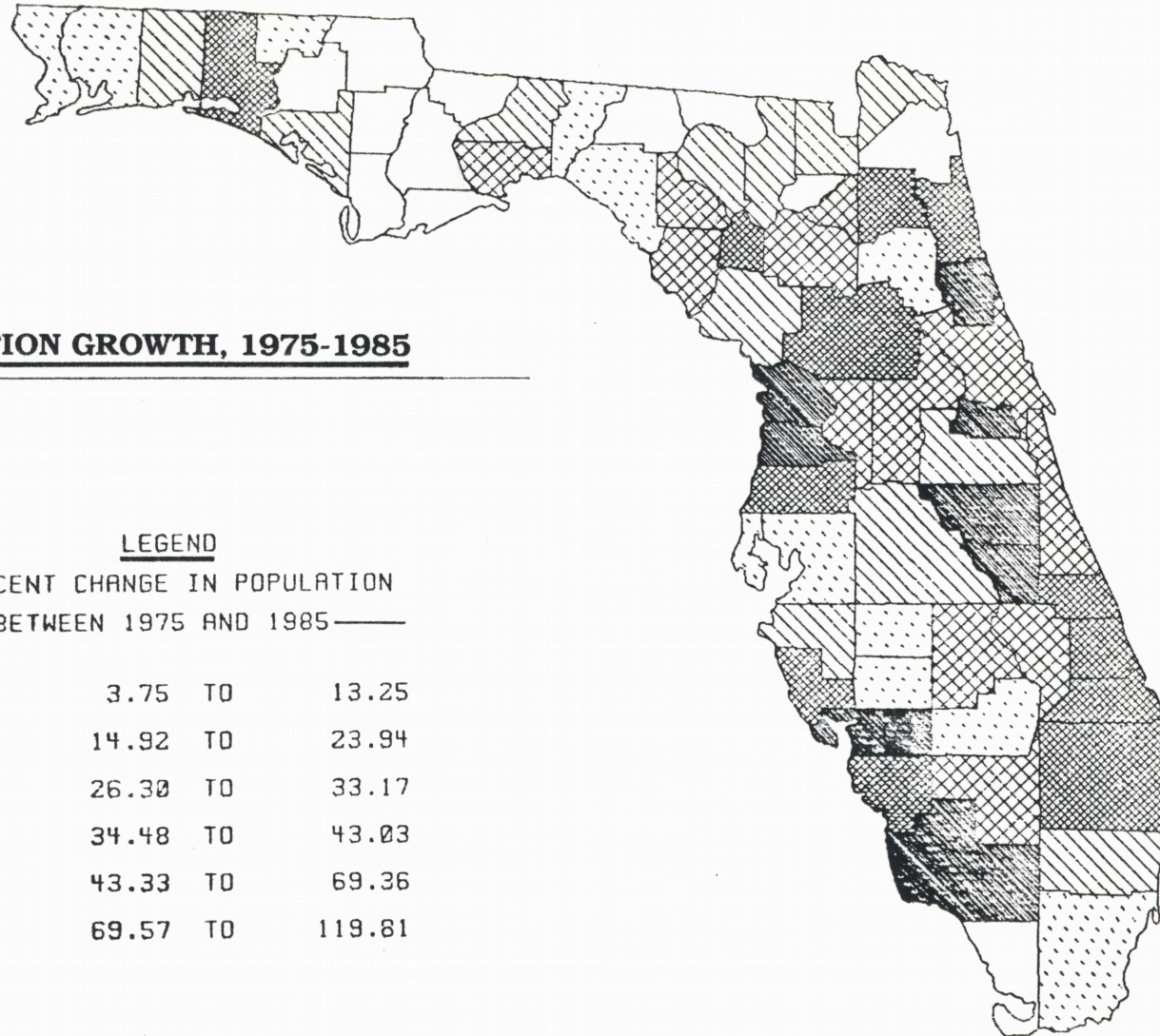
original tracks 1907

**CONNECTING HIGHWAYS
AND INTERSTATES TO
GASPARILLA ISLAND, 1987**





1986 Florida Estimates of Population -- February, 1987



FLORIDA POPULATION GROWTH, 1975-1985

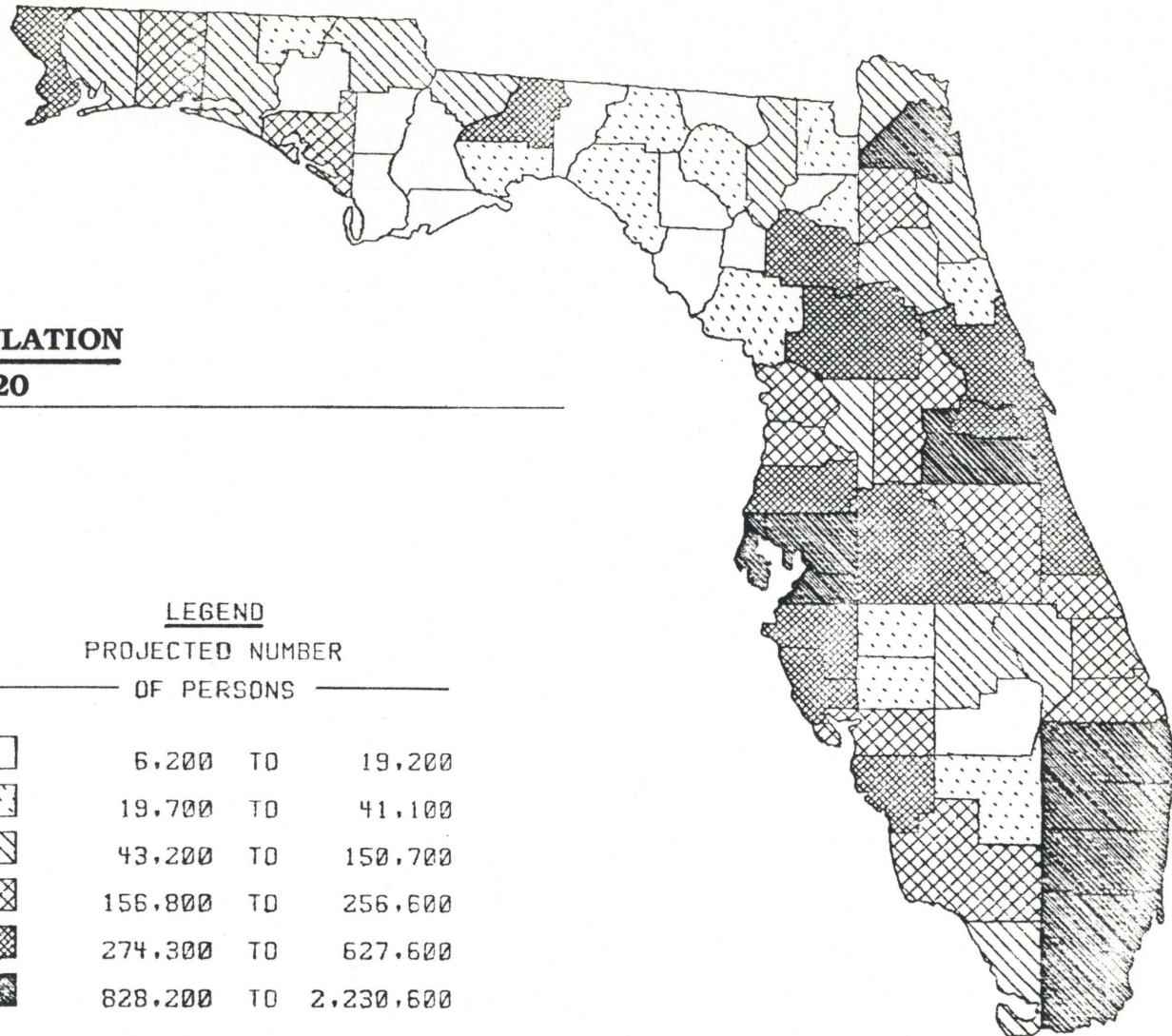
LEGEND

PERCENT CHANGE IN POPULATION
— BETWEEN 1975 AND 1985 —

	3.75 TO	13.25
	14.92 TO	23.94
	26.30 TO	33.17
	34.48 TO	43.03
	43.33 TO	69.36
	69.57 TO	119.81

Florida County Comparisons/1986
Division of Economic Development

PROJECTED POPULATION
FLORIDA YEAR 2020



LEGEND

PROJECTED NUMBER
 OF PERSONS

	6,200	TO	19,200
	19,700	TO	41,100
	43,200	TO	150,700
	156,800	TO	256,600
	274,300	TO	627,600
	828,200	TO	2,230,600

Florida County Comparisons/1986
 Division of Economic Development

GAINING BEACH
ECOLOGY IN TACT
LEAVE AS IS

EAST SHORELINE
GEOGRAPHICALLY STATIC

STORM
EROSION
PRESENT

GOOD FOR
PORT

STORM FLOODING
BEACH EROSION
LEAVE AS IS



no scale

SITE ANALYSIS



EXCELLENT
RECREATION - PARK



GOOD
PARK-MARINA



GOOD
COMMERCE



PUBLIC BEACHES

Site Wind Directions

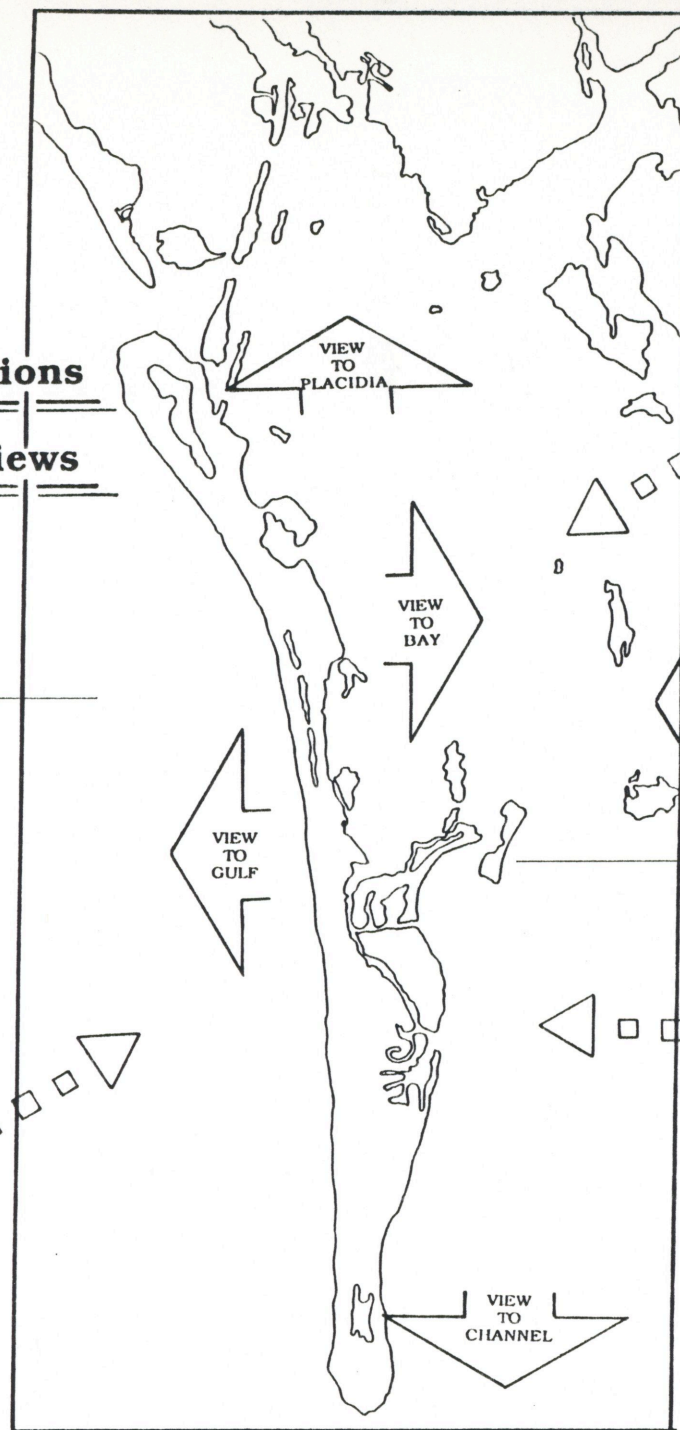
& Views

IMPORTANT VIEWS

GULFSIDE
BAYSIDE
ISLAND FROM MAINLAND

SOUTHWEST WINDS (March)

STORM DIRECTION



VIEW
TO
PLACIDIA

VIEW
TO
BAY

VIEW
TO
GULF

VIEW OF ISLAND FROM MAINLAND

VIEW
TO
CHANNEL

NORTHEAST WINDS (Oct.-Dec.)

EAST BREEZES
SUMMER COOLING

EASTERLY WINDS (Spring-Summer)



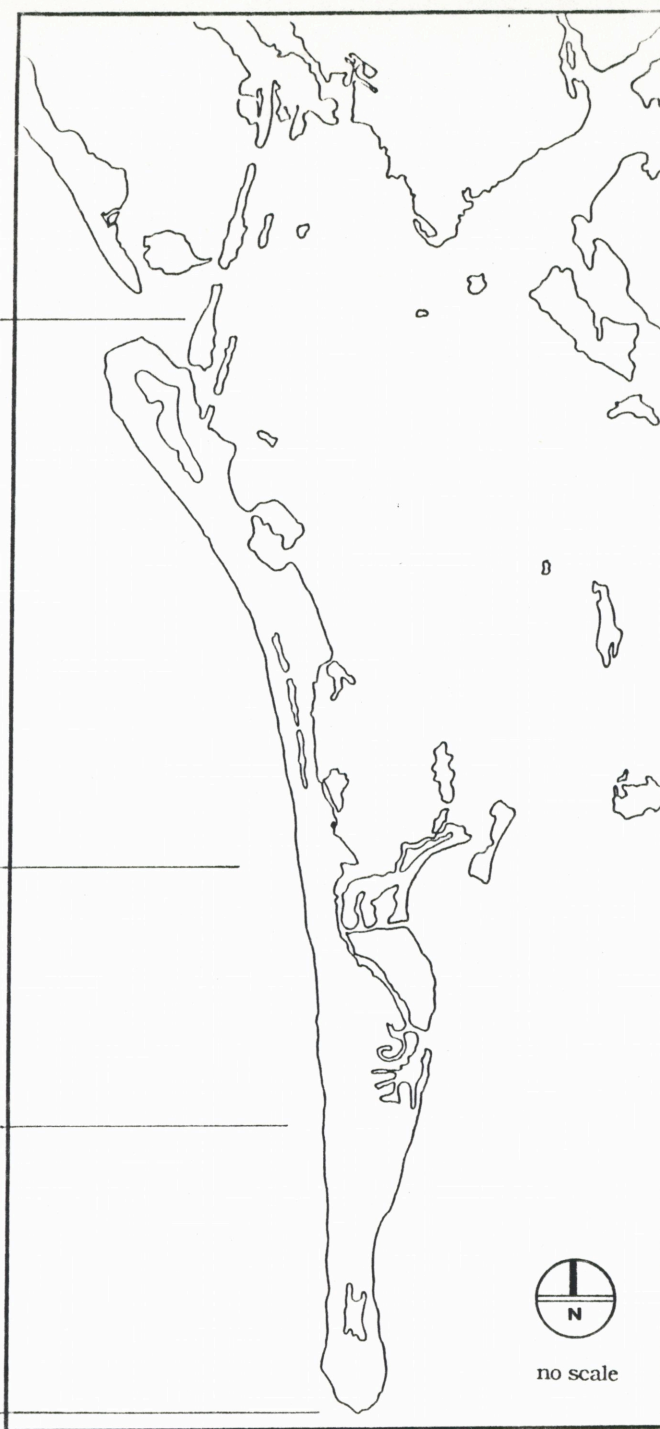
no scale

GASPARILLA PASS
 $\frac{1}{8}$ mile - VERY SHALLOW

ISLAND - 6 miles long

WIDEST POINT - $\frac{1}{2}$ mile

BOCA GRANDE CHANNEL $\frac{3}{4}$ mile



no scale

Gasparilla



COLLAGE of KANDINSKY PRINTINGS

PROJECT



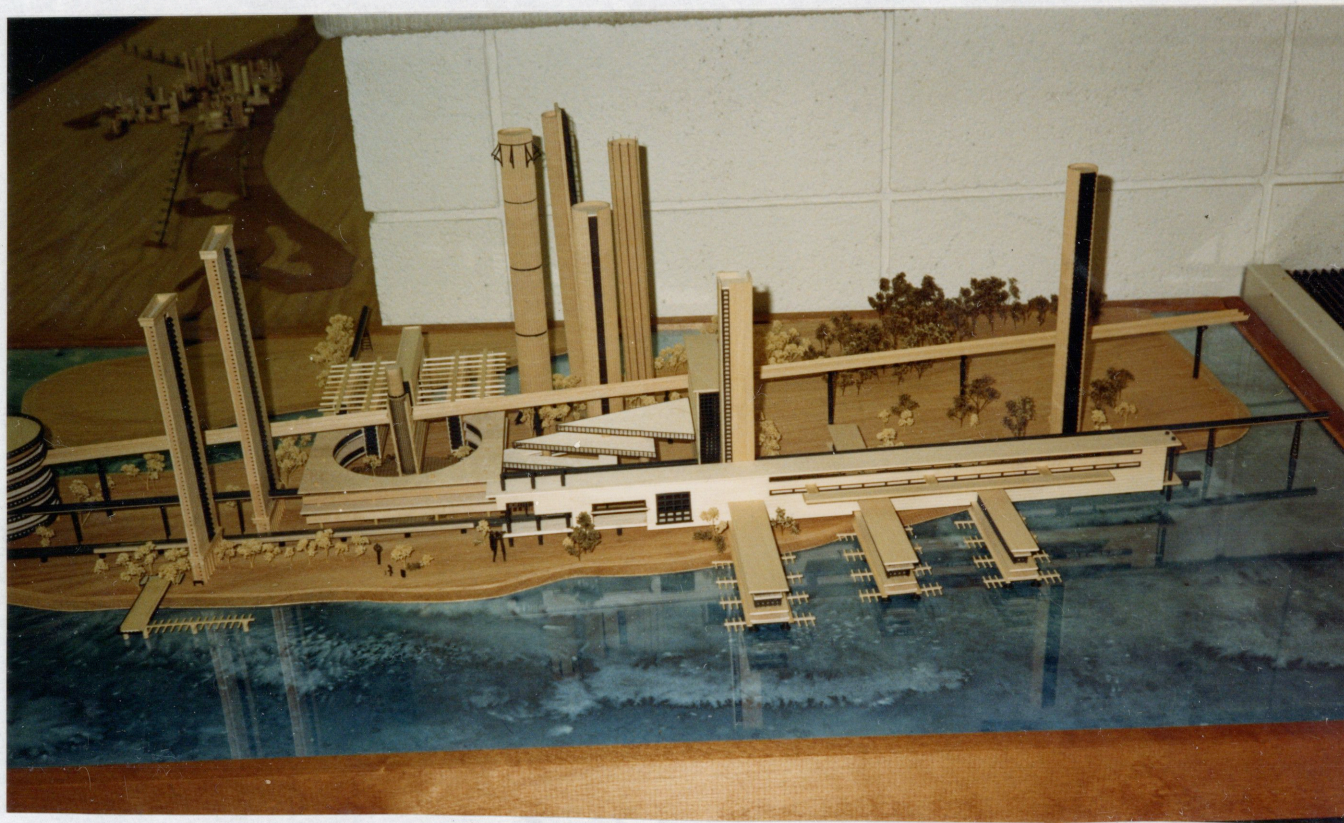
3-DIMENSIONAL REPRESENTATION OF PAINTINGS

PROJECT



ABSTRACT APPLICATION OF THE PAINTINGS TO ISLAND

PROJECT



ENLARGED SCALE SECTION OF CITY

PROJECT

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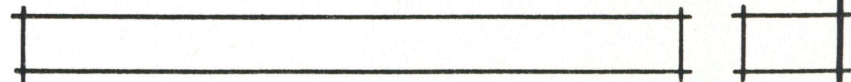
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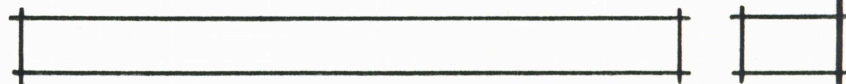
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