Edificio de la Rand Corporation, Santa Monica, Ca hacia 1958. Fotografía: Life/ Santa Monica Public Library

Flexcity 05 :: Rand Corporation Building

El edificio como encarnación de la red distribuida

José Pérez de Lama, 2010

Composición Arquitectónica Grupo C

Universidad de Sevilla

Introducción:

Interferencia: Santa Monica camuflada, Douglas y Kelley, ca. 1943

Edificio de la Rand Corporation, 1953-2006

- **Materialización de la idea de red distribuida, J. D Williams**
- **Espacio arquitectónico e innovación**

- **Funcionalismo fordista vs espacios red**
- **La curiosa vuelta a las tipologías mediterráneas**


SECRET

De: http://www.flatrock.org.nz/topics/flying/douglas_dream_in_santa_monica.htm

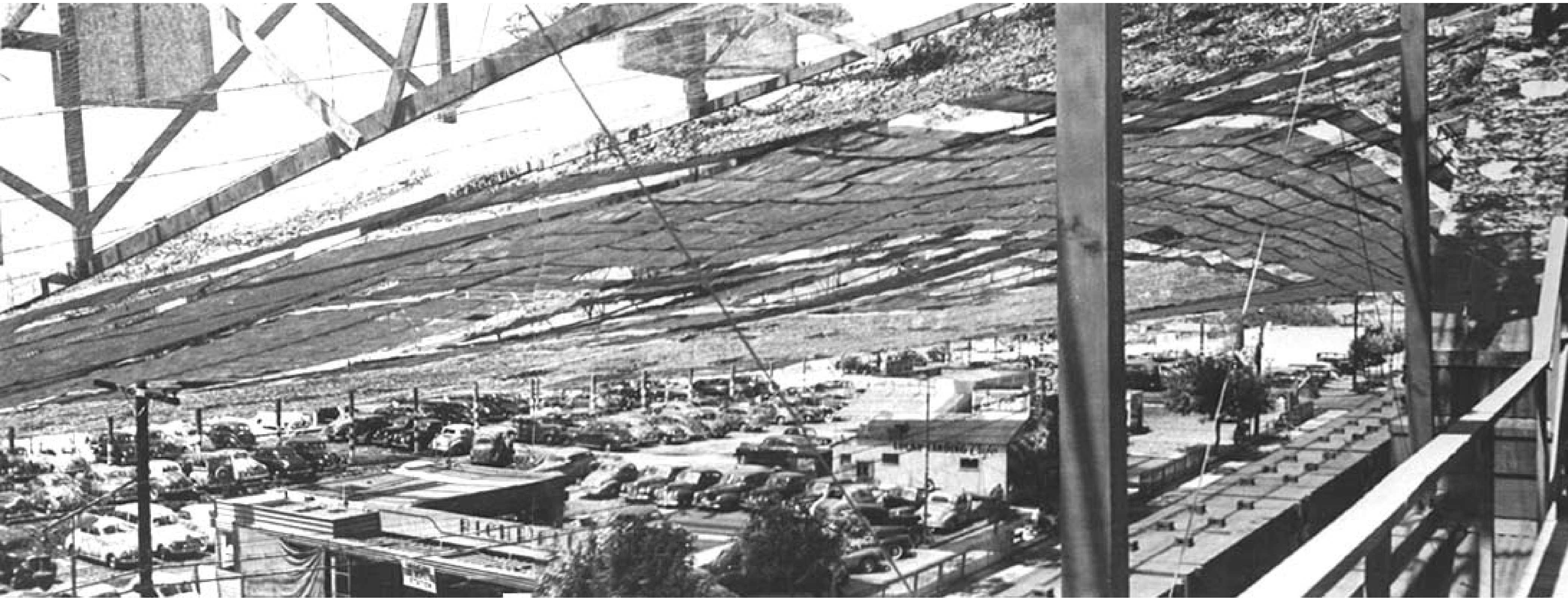
D. W. Douglas, a New York native and graduate of the Massachusetts Institute of Technology, moved to Los Angeles in 1920 to take advantage of its grand flying weather... Douglas began designing planes in the back room of a barbershop on Pico Boulevard... In 1922, Douglas moved to an abandoned movie studio in Santa Monica and began making military planes. At nearby Clover Field, a 15-acre landing site named for World War I pilot Lt Greayer "Grubby" Clover, Douglas tested his aircraft... Eleven years later, Douglas built the civilian DC (for Douglas Commercial) models, revolutionising air travel as an undertaking for ordinary passengers, not just the daring...

With World War II raging in Europe, Douglas realised well before Pearl Harbor that his plant was a sitting duck for an air attack. He didn't wait for the government to protect him; he took the controls. Douglas asked his chief engineer and test pilot, **Frank Collbohm**, and a renowned architect, **H Roy Kelley**, to devise a way to camouflage the plant. (**Later, Collbohm would found Rand Corporation and Kelley would design its headquarters**).

Together with **Warner Bros** studio set designers, they made the plant and airstrip disappear - at least from the air. Almost 5 million square feet of chicken wire, stretched across 400 tall poles, canopied the terminal, hangars, assorted buildings and parking lots. Atop the mesh stood lightweight wood-frame houses with attached garages, fences, clotheslines, even "trees" made of twisted wire and chicken feathers spray-painted to look like leaves. Tanker trucks spewed green paint on the runway to simulate a field of grass. Streets and sidewalks were painted on the covering to blend into the adjacent Sunset Park neighborhood of modest homes that housed Douglas employees. The tallest hangar was made to look like a gently sloping hillside neighborhood.

Designers even matched up the painted streets with real ones. When they were done, the area was so well disguised that pilots had a hard time finding Clover Field. Some of them landed at nearby airstrips instead, protesting that someone had moved the field. Douglas adapted. When planes were due, he stationed men at each end of the runway to wave red flags like matadors. Eventually, the signalmen were replaced with white markers painted on the hillsides. (The facade was such a success that Warner Bros replicated it, fearing that the studio looked like an aircraft plant from the air).

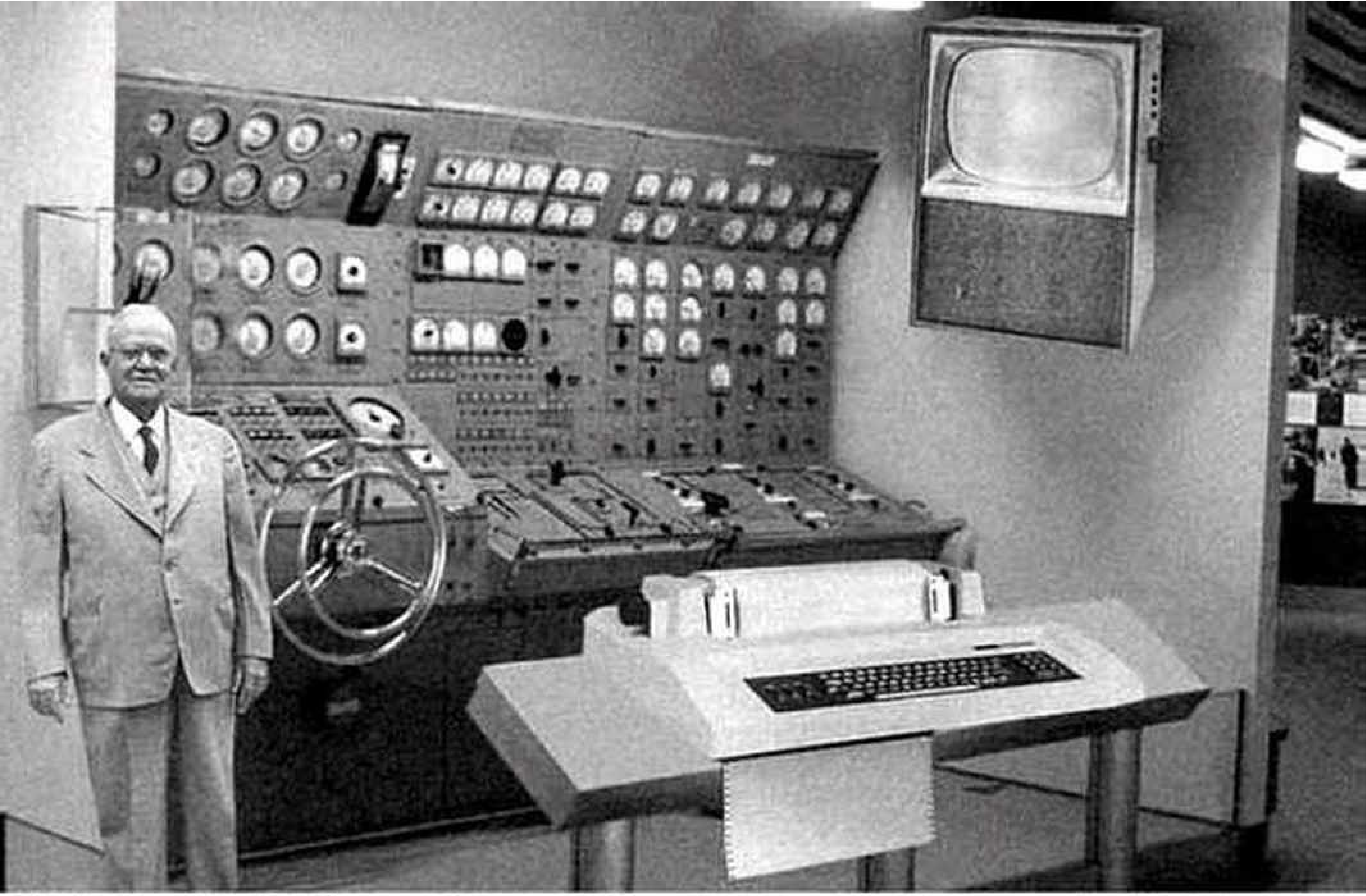
The simulated neighborhood became such a part of the community that, when Douglas Aircraft shed its disguise in July 1945, it was as if a landmark had been destroyed.



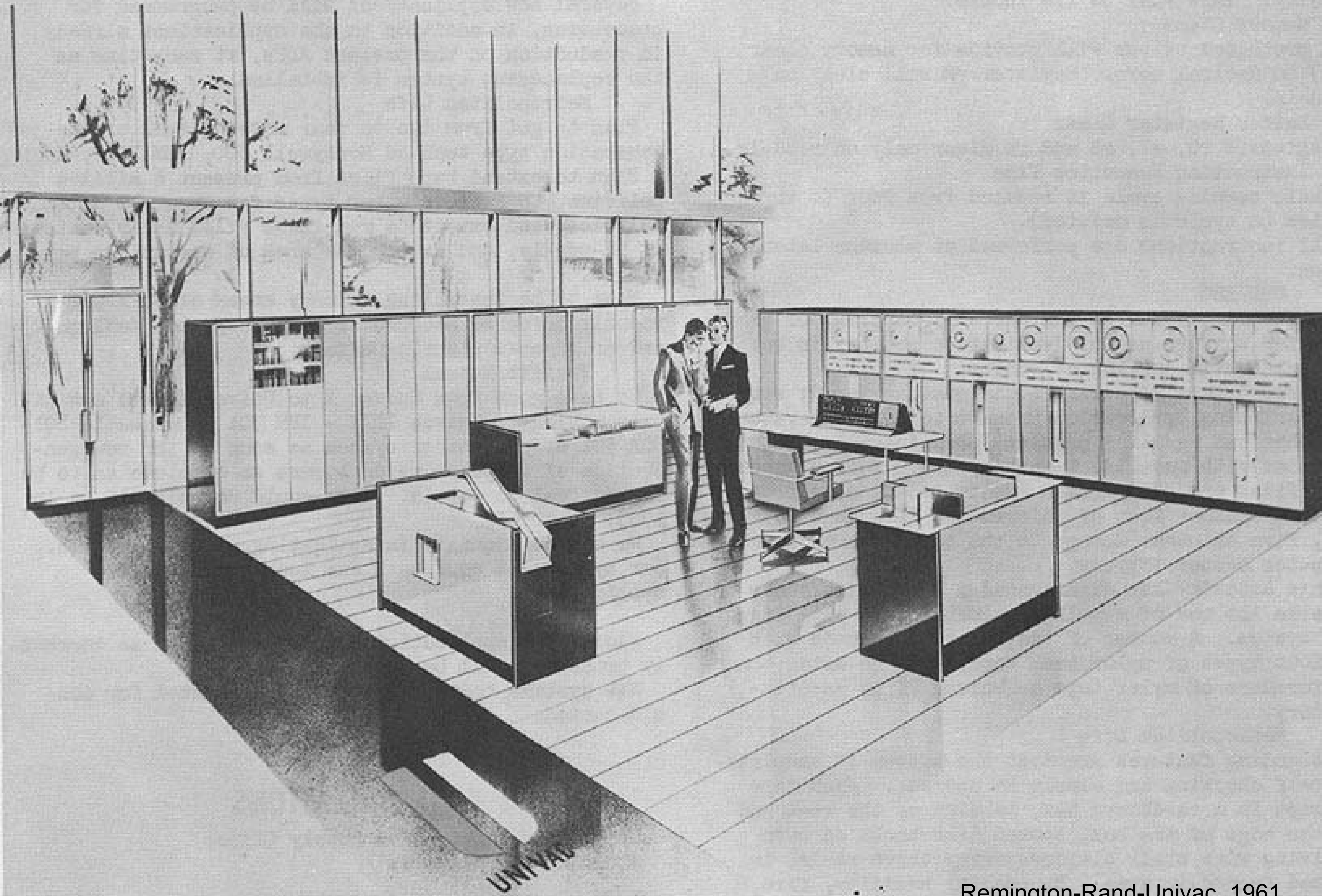
Edificio Rand Corporation
Santa Monica, California, 1953-2006
Concepto: J.D. Williams
Arquitecto: H Roy Kelley

La RAND (Research and Development) Corporation, fundada por el ejército del aire de EU, fue el think tank norteamericano responsable de trazar las estrategias militares de los EU a partir de la Segunda Guerra Mundial, y en particular, durante la llamada Guerra Fría. Puede decirse que casi fueron los inventores del propio concepto de *think tank*. Tienen en efecto el dudoso mérito de ser responsables de la Guerra Fría, entre cuyos logros concretos estarían el desarrollo de la teoría de juegos (John Nash, el propio J.D. Williams y otros), conceptos como los de sistema complejo, MAD *Mutually Assured Destruction*, *Fail Safe...*. También participaron activamente en la producción de los primeros ordenadores, main-frames como Sperry e Univac, de los años 50-60. Otro de sus grandes méritos es la creación dell concepto de red distribuida (Paul Baran, *On Distributed Communicatio*n, 1964.) sobre la que se funda Internet. La Rand fue en efecto uno de los primeros nodos de Arpanet (ca. 1975). Más recientemente vienen trabajando en el de *netwar.* Todo esto hace que al menos sintamos curiosidad por la institución (bastante secreta) y por el edificio donde desarrolló su trabajo entre las década de 1950 y 2004-2006, que según Michael Kubo (2004), es tanto la **materialización del concepto de red distribuida como el dispositivo que permitió la organización de la producción de conocimiento por parte de la Rand según este mismo concepto**

Rand Univac, 1951

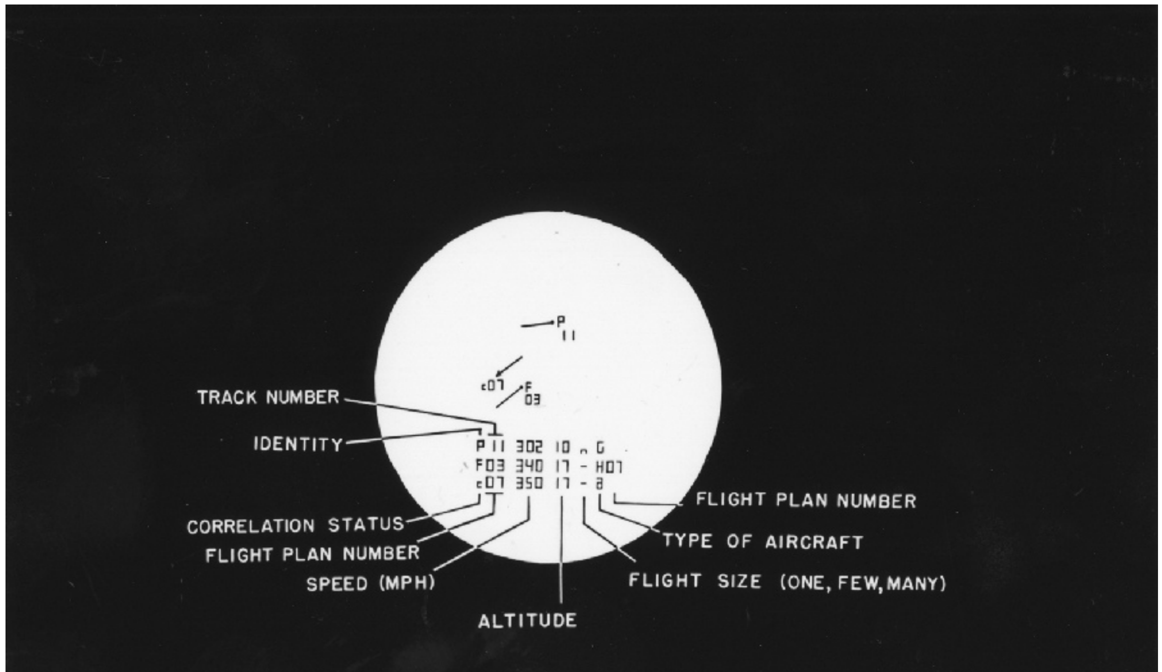


Scientists from the RAND Corporation have created this model to illustrate how a "home computer" could look like in the year 2004. However the needed technology will not be economically feasible for the average home. Also the scientists readily admit that the computer will require not yet invented technology to actually work, but 50 years from now scientific progress is expected to solve these problems. With teletype interface and the Fortran language, the computer will be easy to use.



Remington-Rand-Univac, 1961

The Semi-Automatic Ground Environment (SAGE) was an automated control system for tracking and intercepting enemy bomber aircraft used by NORAD from the late 1950s into the 1980s
SAGE operator's terminal. Software was developed by Rand
http://en.wikipedia.org/wiki/Semi_Automatic_Ground_Environment
Imagen: flickr



TYPICAL IDENTIFICATION DISPLAY

On Distributed Communications Networks

PAUL BARAN, SENIOR MEMBER, IEEE

Summary—This paper[1] briefly reviews the distributed communication network concept in which each station is connected to all adjacent stations rather than to a few switching points, as in a centralized system. The payoff for a distributed configuration in terms of survivability in the cases of enemy attack directed against nodes, links or combinations of nodes and links is demonstrated.

A comparison is made between diversity of assignment and perfect switching in distributed networks, and the feasibility of using low-cost unreliable communication links, even links so unreliable as to be unusable in present type networks, to form highly reliable networks is discussed.

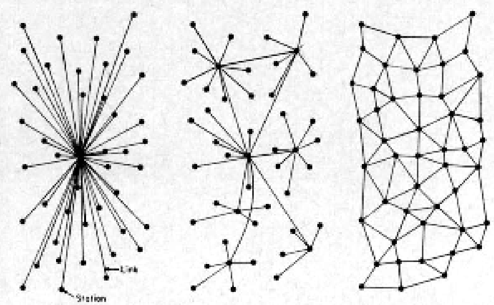
The requirements for a future all-digital data distributed network which provides common user service for a wide range of users having different requirements is considered. The use of a standard format message block permits building relatively simple switching mechanisms using an adaptive store-and-forward routing policy to handle all forms of digital data including digital voice. This network rapidly responds to changes in the network status. Recent history of measured network traffic is used to modify path selection. Simulation results are shown to indicate that highly efficient routing can be performed by local control without the necessity for any central, and therefore vulnerable, control point.

Introduction

LET US CONSIDER the synthesis of a communication network which will allow several hundred major communications stations to talk with one another after an enemy attack. As a criterion of survivability we elect to use the percentage of stations both surviving the physical attack and remaining in electrical connection with the largest single group of surviving stations. This criterion is chosen as a conservative measure of the ability of the surviving stations to operate together as a coherent entity after the attack. This means that small groups of stations isolated from the single largest group are considered to be ineffective.

Although one can draw a wide variety of networks, they all factor into two components: centralized (or star) and distributed (or grid or mesh). (See types (a) and (c), respectively, in Fig. 1.)

The centralized network is obviously vulnerable as destruction of a single central node destroys communication between the end stations. In practice, a mixture of star and mesh components is used to form communications networks. For example, type (b) in Fig. 1 shows the hierarchical structure of a set of stars connected in the form of a larger star with an additional link forming a loop. Such a network is sometimes called a "decentralized" network, because complete reliance upon a single point is not always required.



(a) (b) (c)

Fig. 1—(a) Centralized. (b) Decentralized. (c) Distributed networks.

Examination of a Distributed Network

Since destruction of a small number of nodes in a decentralized network can destroy communications, the properties, problems, and hopes of building "distributed" communications networks are of paramount interest.

The term "redundancy level" is used as a measure of connectivity, as defined in Fig. 2. A minimum span network, one formed with the smallest number of links possible, is chosen as a reference point and is called "a network of redundancy level one." If two times as many links are used in a gridded network than in a minimum span network, the network is said to have a redundancy level of two. Fig. 2 defines connectivity of levels 1, $1\frac{1}{2}$, 2, 3, 4, 6 and 8. Redundancy level is equivalent to link-to-node ratio in an infinite size array of stations. Obviously, at levels above three there are alternate methods of constructing the network. However, it was found that there is little difference regardless of which method is used. Such an alternate method is shown for levels three and four, labelled R'. This specific alternate mode is also used for levels six and eight.[2]

Each node and link in the array of Fig. 2 has the capacity and the switching flexibility to allow transmission between any ith station and any jth station, provided a path can be drawn from the ith to the jth station.

Starting with a network composed of an array of stations connected as in Fig. 3, an assigned percentage of nodes and links is destroyed. If, after this operation,

Manuscript received October 9, 1963. This paper was presented at the First Congress of the Information Systems Sciences, sponsored by the MITRE Corporation, Bedford, Mass., and the USAF Electronic Systems Division, Hot Springs, Va., November, 1962.

The author is with The RAND Corporation, Santa Monica, Calif.

[1] Any views expressed in this paper are those of the author. They should not be interpreted as reflecting the views of The RAND Corporation or the official opinion or policy of any of its governmental or private research sponsors.

[2] See L. J. Craig, and I. S. Reed, "Overlapping Tessellated Communications Networks," The RAND Corporation, Santa Monica, Calif., paper P-2359; July 5, 1961.

Paul Baran, 1964
On Distributed Communications Networks

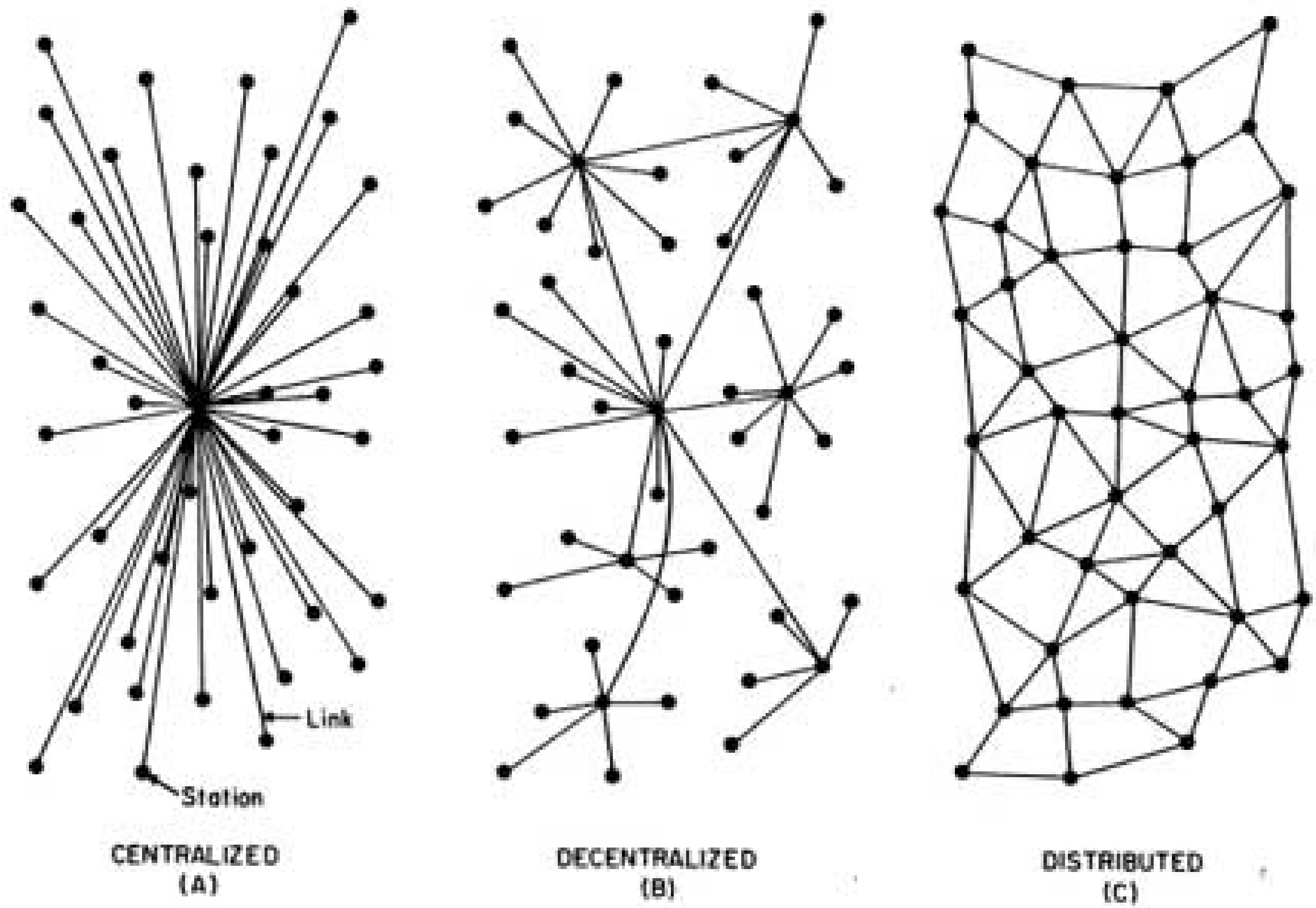
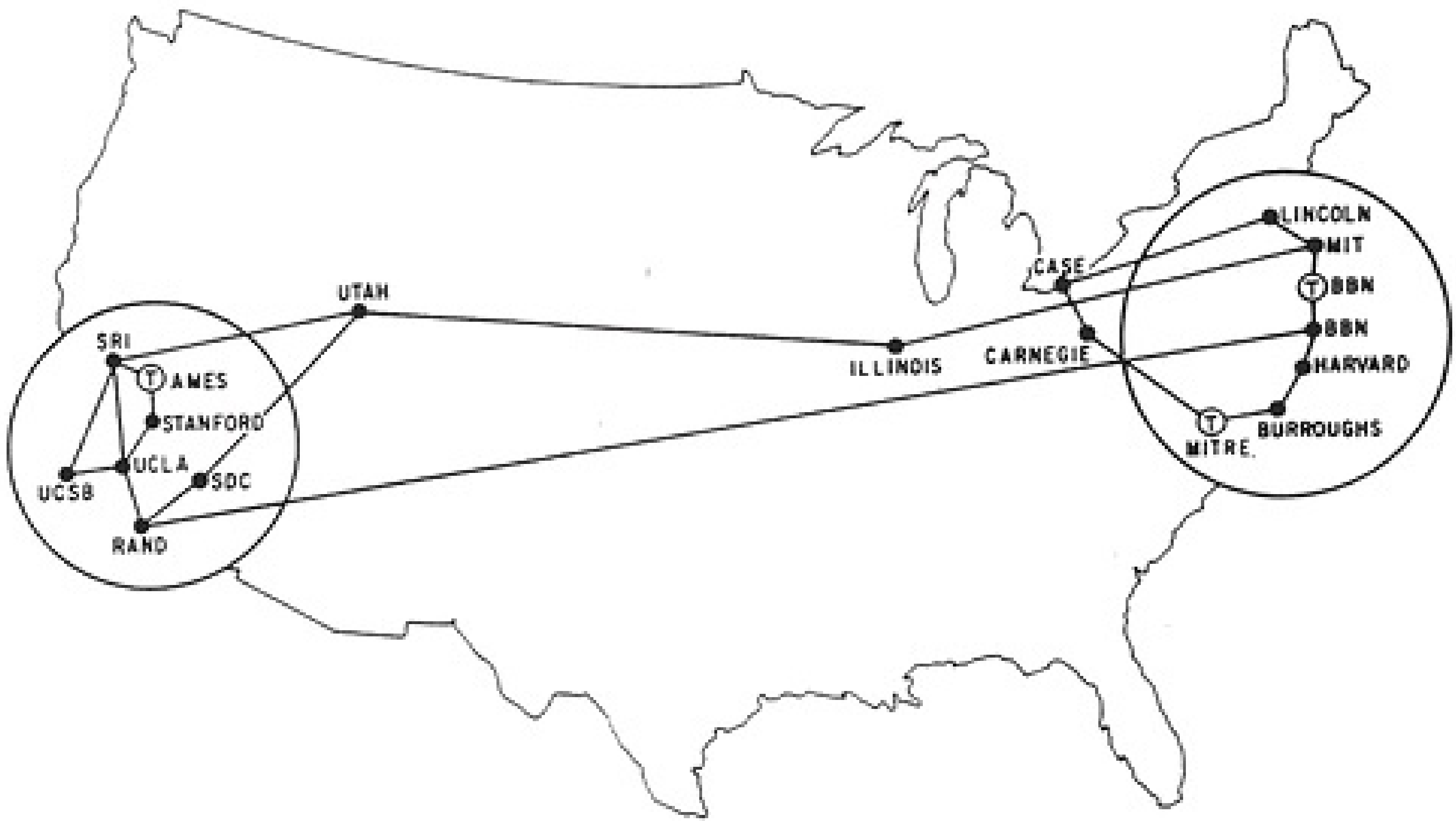


FIG. 1 — Centralized, Decentralized and Distributed Networks

Paul Baran, 1964, detalle del famoso diagrama, On Distributed Communications Networks

Audrey Hepburn, 1961
Interferencia

Peter Sellers, 1964
En Doctor Strangelove, *interferencia02*



MAP 4 September 1971

Arpanet map

FROM: J.D. Williams
26 December 1950

TO: RAND Staff
SUBJECT: Comments on RAND Building Program

These notes are going directly from dictation to vellum, so as to save a little time; it follows that I am not prepared to defend their organization, the grammar, or anything else about it that looks weak in the light of day.
We suddenly find ourselves in a rather advanced state on our building program. It has changed from a vague gleam in our eyes, which was the steady state for several years, to a state where the building site is looking pretty firm and the architect is about to walk in the door. It's a little like Korea: our preparations for the event, while far from negligible, leave something to be desired.

We have discussed this subject among ourselves only a little, and usually at times when we felt we should be doing something else. We have had time to sound off extreme ideas, ranging from an eight-story obscenity at Hollywood and Vine (with a supermarket on the first floor), to whatever the character had in mind who wanted to be able to hear a cricket. I feel that the subject deserves some thought and time, that we should try to reach a meeting of minds, and that now is the time to do it.

If it does not more than provide a basis of disagreement, I thought it would be valuable for somebody to set down some of the facts and fancies that we hold. With these as a starter, I hope we will add and subtract items until we arrive at a set of essentials which cannot be compromised, at a set of desirable entities, and a set of things to be avoided. This memo is not organized along those lines.

Why are we building a building? Aside from some intangibles, such as a feeling of and a look of permanence, that it would give us, the motivation must come from some or all of the following:

1. better location;
2. a better organized facility;
3. better space for individuals.

If it is the need for these that drives us, we had best make sure--in fact, damn sure--that we get them in gobs. For this is going to be a very permanent and very expensive operation; it will be a long time before we can second-guess, and we could do a lot of interesting and important research, and/or stake some of our people to advanced training, with the money. While it is inevitable that compromises will have to be made all along the line, it is important that we not get winded by the details: we must be prepared to abandon the project even at a late date, if the potential benefit gets too low.

But excluding both tents and marble, there is probably a factor of two floating around in the costs. A rural site might be purchased and developed for under two hundred thousand dollars, and a building, which would satisfy our present needs, might be built for as little as half a million. On the other hand, an urban site might cost over half a million, and a building estimated to satisfy our ultimate needs could cost a million. It is my guess that a building on an urban site would tend to be more expensive than one on a rural site, simply because it would have to make up by artifice some of the values inherent in a rural site, such as quiet.

We have given no thought for a long time, so far as I know, to the question: How should a facility for RAND be organized? Several years ago Frank and Arthur Raymond gave some thought to it in connection with the Douglas loft. They made some sketches of an office layout comprising concentric rings of offices with the senior people being concentrated toward the center. While the particular design they explored was suited only to the Douglas loft, or some similar dungeon, the underlying motives still should attract us; **namely, that RAND represents an attempt to exploit mixed teams, and that to the extent its facility can promote this effort it should do so.**

This implies that it should be easy and painless to get from one point to another in the building; it should even promote chance meetings of people. A formal call by Mr. X on Mr. Y is the only way X and Y can develop such a tender thing as an idea--the social scientists have taught me to use X and Y in that bawdy manner. If the interoffice distances are to be kept reasonable, the building must be **compact**. It need not be circular; a square is often a good substitute for a circle, and even a rectangle is not bad, if the aspect ratio does not get out of hand The argument which favors having a compact structure does not extend to space-filling solids. **Inter-floor travel is undesirable**, but chiefly because so little of it is done. When coupled with inter-building travel, it almost vanishes. As current examples, I hazard that Lloyd, Jimmy, and Gene rarely see each other except at formal staff meetings, and their divisions must maintain contact by the Christmas list.

Because of the absolute side of our organization, it doubtless is not feasible to have it arranged so that Elaine in Electronics and Ethel in Publications have optimum physical communications, nor is it especially useful that they have it. But it would be worth a lot if people like Harris and Kahn, Specht and Marcum, Dresher and Wiley, Ansoff and Clement, etc., were as accessible to one another as Goldy and I.

The compactness criterion, unfortunately, runs headlong into **another set of values**, namely, those that concern **the characteristics of a desirable office**.

I believe that the qualities that are more desired are, approximately in the order of importance:

1. privacy;
2. quiet;
3. natural light;
4. natural air;
5. spaciousness.

:

There is room for argument on some of these. Working from the weak end, it could go without saying that, because of space in the sense of building footage is an expensive and rare commodity, that spaciousness must be obtained mostly through illusion--this is the place where the architect must make with the magic. And there are some sports (in the Mendelian sense) such as Goldy, who like to live in tubes and take their light and air from bottles, and there may be some people who have to be seated in rows in order to keep each other awake. Almost everybody likes it quiet.

While we undoubtedly require **several office types for single occupancy as well as several for multiple occupancy**, it is fairly important that **the desirability of offices, within a type, be fairly constant throughout the building**. Otherwise those who get the less desirable ones will be unhappy.

I believe that almost all of our requirements can be satisfied, and in a reasonably priced structure, if we have enough land. Since we have a strong internal reason for building compactly, the argument in favor of a substantial piece of land is not that it is desirable to spread out the building. The principal function of land is to provide insulation and isolation, and spaciousness. Insulation from noise, isolation from distractions and from the public gaze--my present office windows are high to begin with and then the bottom section is frosted--just so that people waiting for buses, or otherwise loitering, cannot participate in my meetings.

One of the really interesting, and pressing, questions is: Can we put up a building on a piece of land as small as that opposite the City Hall and still get approximately what we want? On my own part, there are times when I think we just can, and other times when I think we just can't.

Just to have something concrete to think about, I invented some typical offices and structure to go with it, and have been trying to fit on to that piece of property. For purposes of illustration, I will describe them briefly; but let me say that I appreciate that others will have ideas, and doubtless better ideas on sizes and arrangements--I am only prepared to shed blood from my veins in defense of these; not artery blood.

But first, recall that RAND now has about four hundred and fifty people, of whom about three hundred are office dwellers; the rest live in Washington, machine rooms, and open areas, or they are nomadic, such as the guards and janitors. These people live in about two hundred offices; about one hundred of these are singles; about seventy are doubles--correction, about one hundred and ten of these are singles--about seventy are doubles; and about twenty are occupied by three or four persons. I guess that in a new building there would be fewer of the last and more doubles.

I consider three office sizes, for purposes of exploration. These were--these are--nine by six and one-half, nine by thirteen, and eighteen and one half by thirteen; inside dimensions, in all cases, I require that the first have one window and that the other two have two windows. The first is suited only to single occupancy, the others, single or alterable or for two occupants.

I hypothesized six-foot width for hallways. Offices of these types can be accommodated in a building element, or wing, or section, thirty-four feet wide, outside measure, allowing six inches for each wall. The hall can be central with 9 ´ 13 or 9 ´ 61 1/2 offices on both sides, and the hall would be at one side where 18 1/2 ´ 13 offices on both sides, and the hall would be at one side where 18 1/2 ´ 13 offices prevail. I have played with this a little, and it is pretty flexible and efficient. This model at least serves to give some ideas about total building footage required.

The first peek at the problem suggest that our present size of organization and the size of the urban properties that are being considered, a one-story structure is infeasible. This is strengthened if we take into account the possibility that RAND may grow. I have, therefore, considered the elements of RAND in two categories, research and non-research, in the hope that at least the research people could be kept conveniently together on one floor. This does not quite get us off the hook; however, because **future growth of RAND**, if it occurs, would presumably be growth of the research arm principally. Therefore, the **building plan should be flexible enough to encompass (say) another 150 research people**.

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The 9 ´ 13 offices mentioned earlier are a convenient unit. In terms of them, I estimate that our present needs for research offices and associated facilities (e.g., conference rooms) are 200 units. Similarly, the non-research functions (e.g., numerical analysis, publications, business administration, etc.) seem to require about 150 units. In the future the research elements might require 300 units and the non-research perhaps 200 units. If you treat the 9 ´ 13 unit as occupying 13 ´ 13 1/2 of building space (thus including the walls and half the hall), you get 175 square feet per unit. This indicates that the present needs for research and non-research are like 35,000 and 25,000 square feet, respectively, and that these may eventually change to 50,0000 and 35,000, respectively. Using a standard building section, 26 feet wide, the research staff would need about 1350 linear feet of that structure and the non-research staff would need about 1000 linear feet of such structure; eventually these might change to 1900 and 1300.

Now having some idea about how much space we needed, and of a way of packing it into a building section in a manner to provide light and air for all concerned, I was then ready to festoon the landscape with this stuff in some useful manner, if possible.

Judging from modern buildings I have seen, a popular way of spreading stuff around is to arrange it like the bone structure of a fish: a central structure with wings jutting out at intervals on both sides of the skeleton. It may be a useful design for us, if we have enough land. But for the parcel which we are now considering so seriously, the fish skeleton eats up the available space very fast; and it is not the best design for inter-office travel.

I was therefore led to try a system of **closed courts or patios**, and became involved in the **theory of regular lattices**, which is a fascinating subject; the square, the figure eight, and a hierarchy of more complicated designs.

As one rough measure of the utility of such designs, from our special point of view, I have taken the average distance between offices, measured along the grid, i.e., the halls. With any intelligent arrangement of our people, we can do better in practice than these average distances, but they still offer some information which is pertinent to us. I insert here a little table which gives the average distances for various simple lattices, expressed as a percentage of the total length of all the halls in the building.

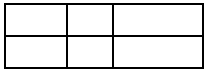
I also exhibit a picture of one of the lattices. The last column (S) in the table shows the overall size of the lattice. **We note that the average travel distance decreases as the lattice becomes complex**. that the decrease is most noticeable for the square lattices, and that the decreases are particularly noteworthy in the first two or three steps. For example, in a nine-patio lattice (i.e., a 4 ´ 4), the average distance is 10 percent of the total length of halls, as compared with 25 percent in the case of the simple square. also, the size of the building as measured by its side S is half as great as that for the square

Average Distance Between Points in Lattice
(measured along lattice lines, expressed as a percentage of the total length of all lattice lines)

		No. of horizontal lines (μ_1)				
		2	3	4	5	S
No. of vertical lines (μ_2)	2	25				25
	3	19	14			17
	4	17	13	10		12
	5	15	12	9.6	7.5	10

S= length of side of the square lattices (as percentage of all lattice lines)

$\mu_1 = 3$ $\mu_2 = 4$



Of course, you have to watch it a little when you begin to translate the lattice into building structure. The building sections have finite width (twenty-six feet in my model), which reduces the width of the lattice openings; the people who live there, and who were so happy initially, will begin to notice it if the patios shrink too much. What the useful minimum is, perhaps our architect can tell; perhaps our psychologists can assist him.

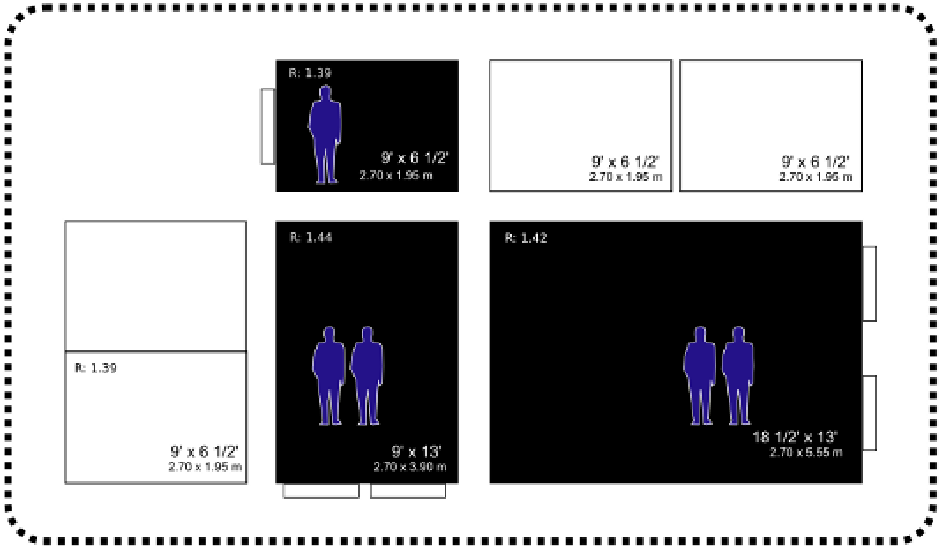
A little playing with this will convince you that it is possible to put us on a fairly small piece of land--maybe. For example even our hypothetical future research organization, requiring nineteen hundred feet of halls on this model, could be fitted on and around a nine patio system, measuring two hundred and sixty-four feet on a side; on the three hundred and forty-four feet deep property opposite the courthouse, this would permit a forty foot set-back on front and rear. The patios would be like fifty-three feet across. I don't know what you would do with the non-research fractions of RAND. Of course, a second story would put over two-thirds of the ground floor. Such second story space might be regarded as less desirable than the first story space, and it might depreciate the first story space: for example, the patios might have to be larger to be equally desirable what with all that over-hang (correction--what with all that structure rearing up about it).

There is another way to make the patios somewhat larger, and which would make small ones more tolerable--and which would moreover reduce the average interoffice distance below that of the lattice: it might be that, in view of climatic conditions here, we could throw all or most of the halls out of the building. The patios could be surrounded by porches onto which the office doors would open. The porches would provide cover against the rain on those three or four happy days each year: otherwise, one could cross the patios from office to office. These small sheltered areas would not be windy.

My guess is that if a multiple patio scheme were artfully done, it would develop that "outside offices", in the normal sense would rank low in popularity for they wouldn't be less quiet and intimate; in fact, the vista from them would be filled with unrewarding objects such as automobile traffic and the rear of the Elks Club. Of course, the number of outside offices diminishes as the lattice becomes more complex.

Later: After seeing the above, I was tempted to fix it up a little. But reason prevailed: the way it is, those who disagree with a point will have to guess whether its me they disagree with, or my secretary, who often construes my "would"'s as "wouldn't"s, etc; conversely, they may find me biting their flank just when we seem to have reached harmony.

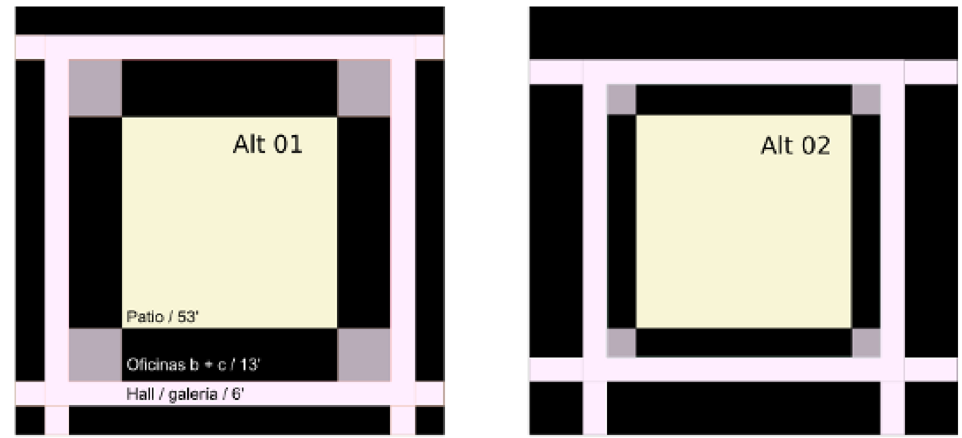
Rand Corporation Building
Santa Monica California, 1953-2006
Arch. H. Roy Kelley / Concept: J.D. Williams
Diagram José Pérez de Lama, 2010



1/ Células de oficina

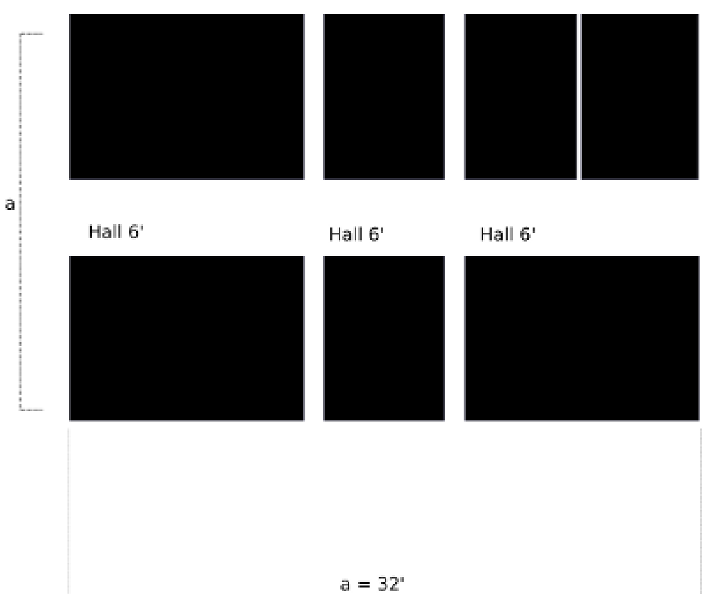
Medidas en pies (1 pie = 0.30 m)
a partir de texto de J.D. Williams

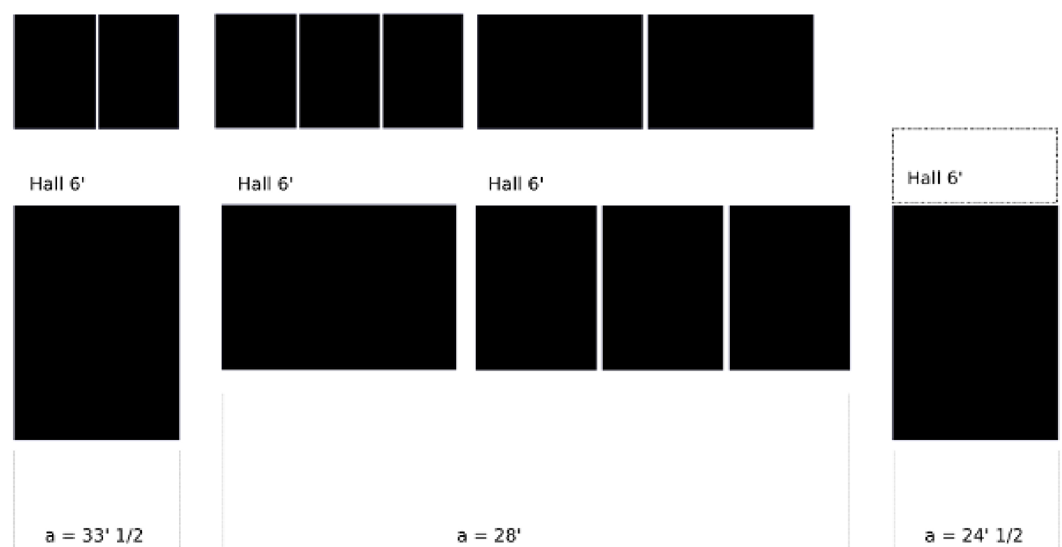
1. privacy;
2. quiet;
3. natural light;
4. natural air;
5. spaciousness



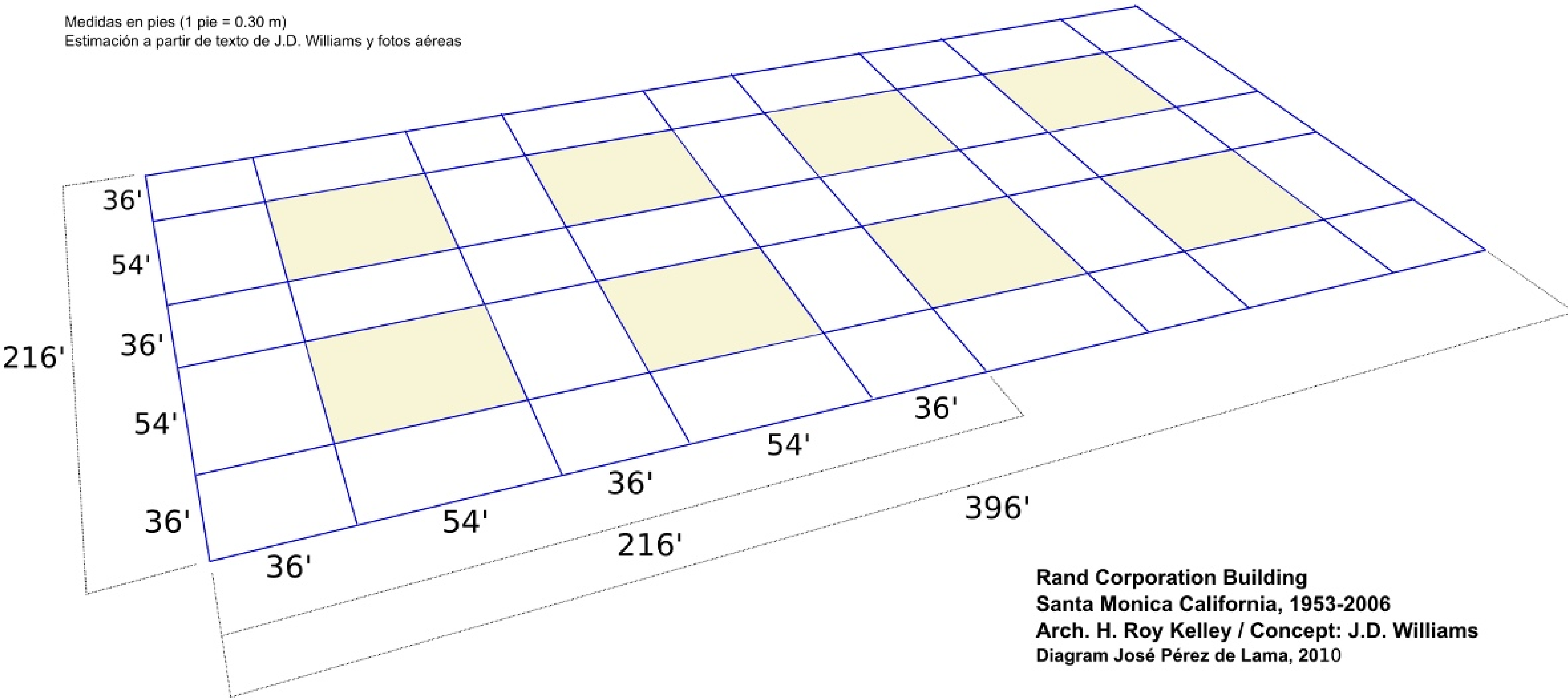
3/ Composición en torno a múltiples patios / a=26' p=53'

2/ Posibles combinaciones / a1=32'; a2=26'

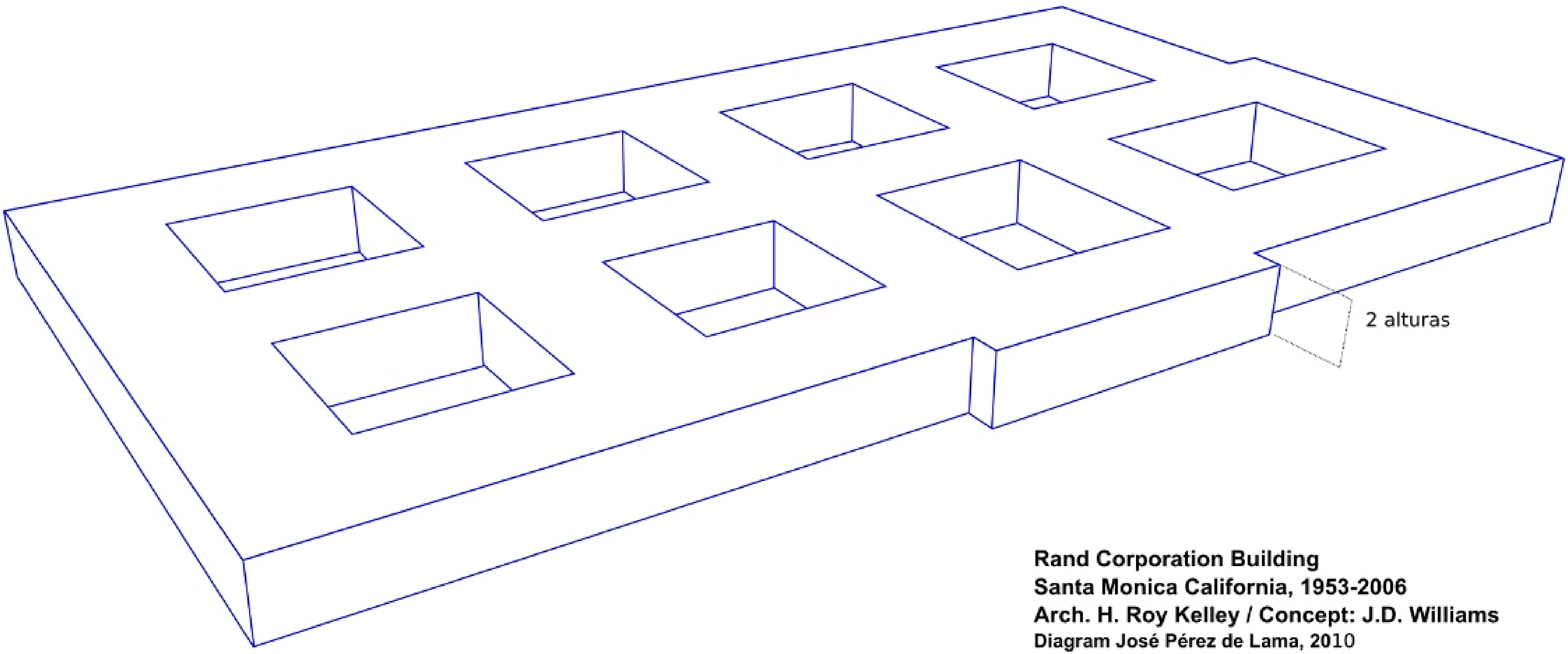




Medidas en pies (1 pie = 0.30 m)
Estimación a partir de texto de J.D. Williams y fotos aéreas



Rand Corporation Building
Santa Monica California, 1953-2006
Arch. H. Roy Kelley / Concept: J.D. Williams
Diagram José Pérez de Lama, 2010



Rand Corporation Building
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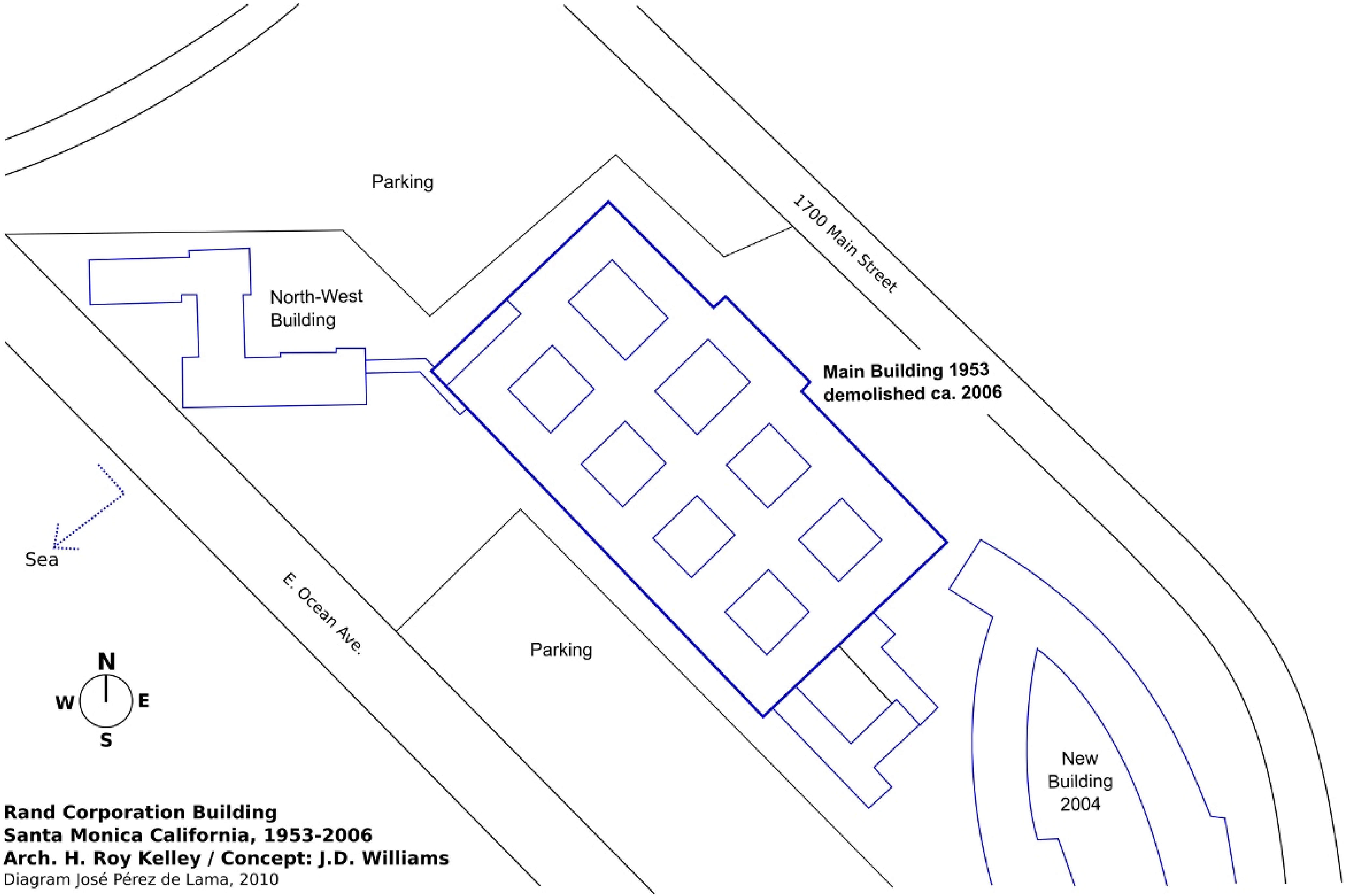
Diagram José Pérez de Lama, 2010



Rand Corporation Building
Santa Monica California, 1953-2006
Arch. H. Roy Kelley / Concept: J.D. Williams
Diagram José Pérez de Lama, 2010

Fotografía aérea, hacia 1958


RAND
SOUTH PARKING LOT
PRIVATE PROPERTY
NO TRESPASSING
CPC SECTION 602L
THIS PARKING LOT IS UNDER
VIDEO SURVEILLANCE
UNAUTHORIZED CARS WILL BE TOWED
AT VEHICLE OWNER'S EXPENSE

Santa Monica Public Library Image Archives

Santa Monica Public Library Image Archives

Santa Monica Public Library Image Archives

Rand Corp Building, imágenes 1953
Santa Monica Public Library

Santa Monica Public Library Image Archives

Santa Monica Public Library Image Archives

Rand Corp Building, imágenes ca. 2001
Zonas de encuentro informal
Santa Monica Public Library

Santa Monica Public Library Image Archives

Santa Monica Public Library Image Archives

Rand Corp Building, imágenes
1958 & ca. 2001 (abajo izq) *Rand life*
Santa Monica Public Library / Life

Santa Monica Public Library Image Archives

Rand Corp Building, imágenes ca. 1958
Life Magazine

Por un lado, podemos ver una conexión directa con el Building 20 de MIT (1943) que comentamos en la clase pasada.

Un modelo de compatibilización de cooperación y autonomía.

Michael Kubo (2004) escribe:

… un método de diseño no descriptivo (diagramático)

… una forma de investigación construida (…) un ejercicio de resolución de problemas en torno a la rigurosa organización de un centro de producción de pensamiento innovador... “RAND representa un intento de explotar equipos mixtos, y (...), en la medida de lo posible, sus instalaciones deberían promover este planteamiento... una estructura densa y compacta que generará la máxima conectividad entre todas las partes del edificio... una máquina para catalizar interacciones e ideas...

El edificio influyendo sobre la forma de actuar, pensar e innovar

Si el diseño del edificio se basó en las características de la cultura institucional de RAND, también tuvo un papel esencial para el desarrollo de esta cultura...

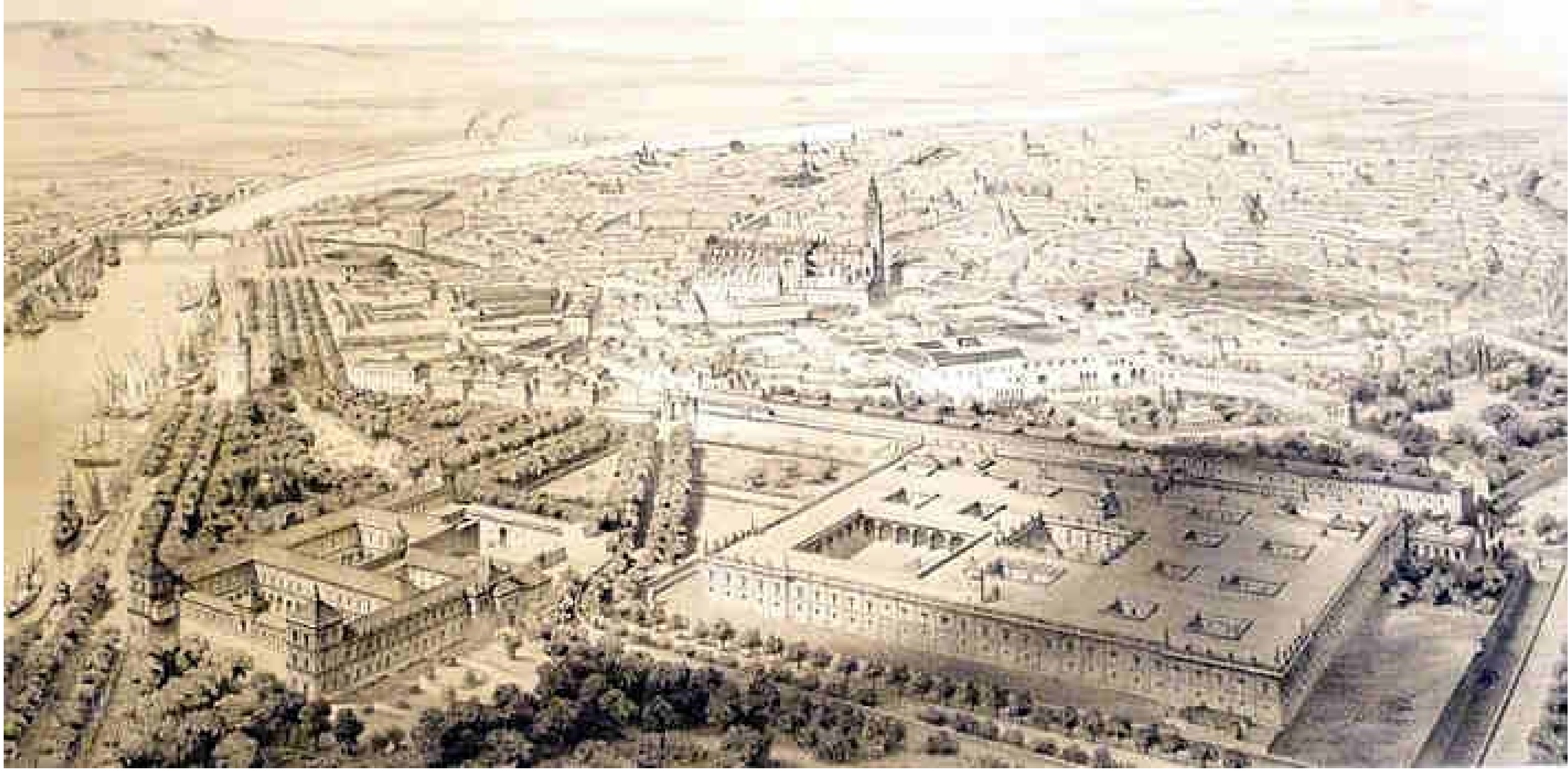
No es de extrañar que las innovaciones de Baran tuvieran lugar allí, ya que el propio edificio está proyectado a conciencia para funcionar como una red distribuida: una retícula densa y redundante de circulación con la máxima conectividad entre las distintas partes. El objetivo de su organización – incrementar el número posible de vías de circulación entre dos puntos – es una expresión literal del principio fundamental de la **red (de comunicación) distribuida**: multiplicar el número de rutas que puede tomar un mensaje hasta su destino para garantizar su transmisión en caso de que algunas de ellas no sean operativas. Tanto el edificio como la red se estructuran para maximizar la comunicación y ambos sistemas están formulados sobre la base de la teoría de grafos, la matemática de los nodos, las rutas y las conexiones...

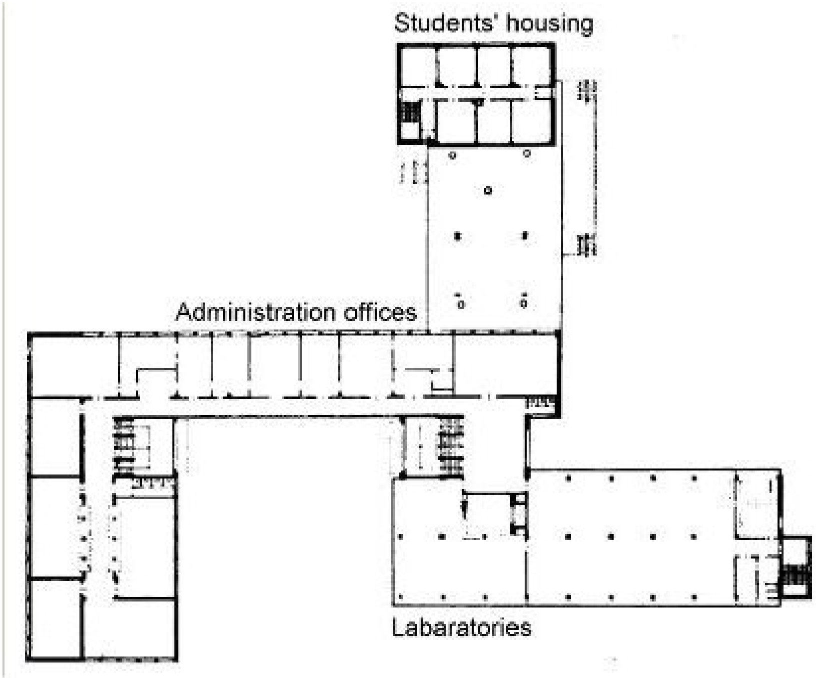
El enfoque holístico generado por la organización del edificio, donde los investigadores de disciplinas teóricas como las matemáticas y la física estaban en contacto permanente con las investigaciones de ciencias aplicadas de economía, psicología e ingeniería, anticiparía con el tiempo el resultado más influyente de las investigaciones de RAND para el pensamiento contemporáneo: la idea de **análisis de sistemas**, un método de investigación que no se basaba en el estudio de problemas aislados sino en sistemas totales en los que tienen lugar acciones y decisiones...

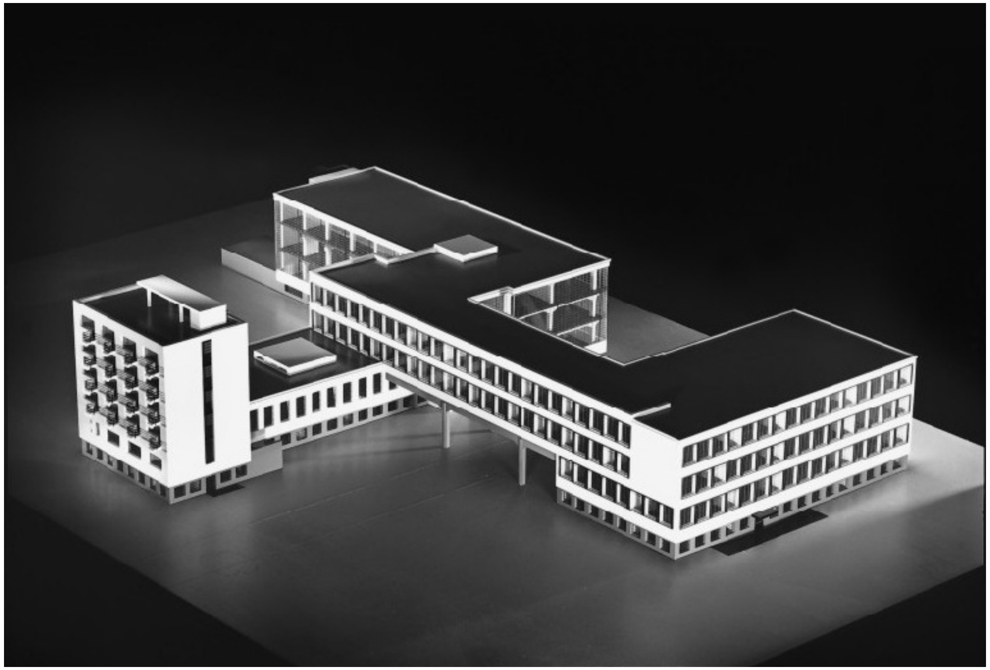
… pronto pasará a ser una leyenda... lo único que quedará del edificio de RAND será su estructura profunda, la arquitectura conceptual que subyace en su organización física: una ***diagrama abstracto*** y el proceso analítico sin precedentes con el que fue desarrollado...

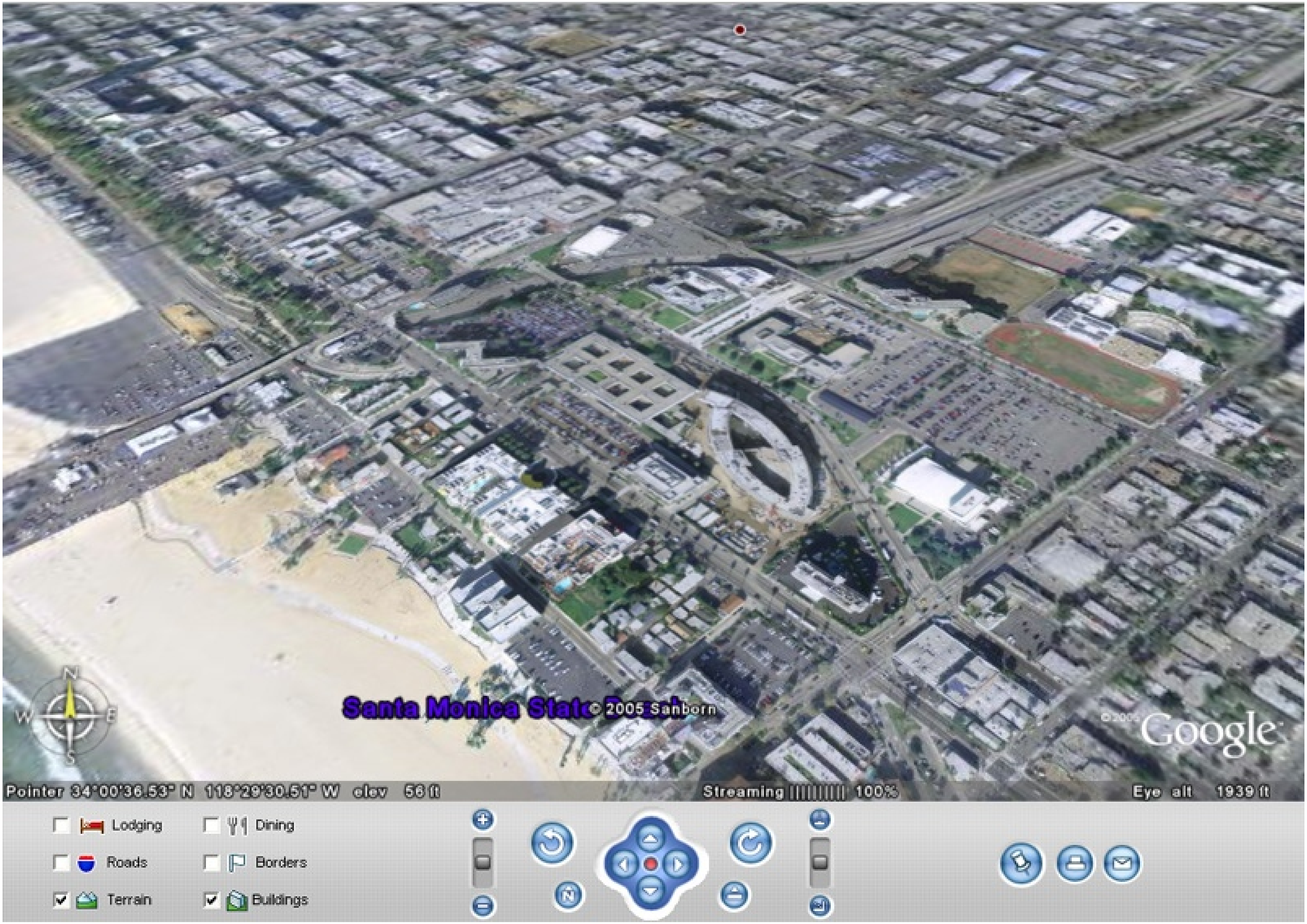
Michael Kubo, 2004, Verb Connection

El modelo industrial (Bauhaus, abajo) y el modelo reticular que curiosamente coincide con la arquitectura tradicional y el urbanismo del Mediterráneo









Nuevo edificio Rand Corporation, 2004-*2006*

Nuevo edificio Rand Corporation
2004-*2006,* DMJM
Un edificio sostenible que intenta
mantener los aspectos que
caracterizaron al edificio antiguo...

Vista aérea de Santa Mónica hacia 2006 en la que se observa el nuevo edificio y la desaparición del edificio antiguo. El suelo fue cedido a la Ciudad de Santa Monica como parte de la operación de reconstrucción de la sede de la RC

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