

IMPORTANT NOTE—If you reside or have your principal office in the localities of a Chapter or Chapters of The Institute which are opposed to the "Architects Roster" or the "Register of Architects Qualified for Federal Public Works", do not answer or fill out the questionnaire.

RECEIVED

CITY OF Wash. D.C.

STATE OF _____

MAY 18 1946

DATE 3 May 1946

*Wash. D.C.
Capt.*

EDMUND R. PURVES

QUESTIONNAIRE FOR ARCHITECTS' ROSTER AND/OR REGISTER OF ARCHITECTS QUALIFIED FOR FEDERAL PUBLIC WORKS

TYPING IS MANDATORY. PARTNERSHIPS SHOULD MAKE A JOINT RETURN ONLY.
Pink copy is to be retained by the author; other copies to be mailed to The American Institute of Architects, 1741 New York Avenue, N. W., Washington 6, D. C.

1. (a) **FIRM** (individual or partnership) DAVID BAKER, Registered Architect A.I.A.
- (b) **FORMER FIRM**, if any Consultant
2. **BUSINESS ADDRESS** c/O Bureau of Ships, Navy Department
3. **YEAR ESTABLISHED** _____

4. PERSONAL HISTORIES OF PRINCIPALS	Name of Principal	Name of Principal
	<u>DAVID BAKER</u>	

Furnish data complete, but keep to essentials. Describe each member of firm individually; if more than two, append extra sheets.

- (a) **Date of Birth** 7 February 1917
- (b) **Education** Illinois Institute of Technology (Armour) Feb 1934-June '38 BS Architect Chicago
Illinois Institute of Technology (Armour) SE 38-JE '39 Graduate work Cambridge
Harvard University (Kendall Graduate Scholarship) SE '41-JE '42 M.S. Architect Wash. D.C.
George Washington University (Naval Arch.) August 1943 Diploma
- (c) **Experience Prior to Own Practice** SEE ATTACHED SHEETS
(Give architect or architectural firm affiliations, positions held, and approximate dates of employment.)
June 36 - Feb 1940 (Temporary Equiv. to 1 1/2 yrs full time) Earl Reed Architect, Chicago
Alphonso Iannelli Industrial Designer & Sculptor Chicago,
Thomas Shaver Engr. Chicago, Sam A. Marx Architect, Chicago,
J. Goldman Architect Chicago, Chicago Housing Authority.
Feb '40-Feb '41 James Gamble Rogers Architect New York City, Hatfield Electric, Chgo
Neiler Rich & Co., Chicago.
Feb '41-July '41 E. Novak & Associates Engrs & Designers, Chicago
July '41-July '42 Shaw Naess & Murphy, Architect, Chicago, Walter Bogner, Arch.,
July '42-June '43 Naval Ordnance Laboratory, Washington, D.C. (Cambridge, Mass.
July '43-Nov '45 Bureau of Ships, Navy Dept., Washington, D.C.
Nov '45- Present Electronics Division, Bureau of Ships, Wash., D.C. Consulting Architect for Electronics Division.
- (d) **Commenced Practice** May 1941
- (e) **Number of Years a Principal** 5

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(f) **Architectural Licenses**

(Give State, Number and Year Issued.)

Illinois #2921 May 1941 By written examination
 Massachusetts #90 May 1942 By oral Exam, exhibits (Exemp.)
 Illinois #860 Dec. 1945 Register, Prof. Engineer

(g) **Professional Societies and Offices Held**

American Institute of Architects, Corporate Member

(h) **Service in World Wars I and II.** (Append data if desired.)

Naval Ordnance Laboratory 1942-1943) Architect &
 Bureau of Ships, Navy Dept. 1943- Present) Engineer

(i) **Civic Activities**

Member Harvard Club of Washington, D.C.

5. CONSULTANTS USUALLY EMPLOYED:

(If a member of your staff, so state)

(a) **STRUCTURAL ENGINEERS**

Mr. Thomas Shaver
 Name of Firm or Individual 53 W. Jackson Blvd., Chicago, Illinois
 Business Address Mr. Harry Briggs
 Yards & Docks, Navy Department, Arlington, Va.

(b) **HEATING & VENTILATING ENGINEERS**

Name of Firm or Individual Neiler Rich & Bladen
 Business Address 431 S. Dearborn Street, Chicago, Illinois

(c) **ELECTRICAL ENGINEERS**

Name of Firm or Individual Mr. M. M. Portnoy
 Business Address Bureau of Ships, Navy Dept., Washington, D.C.

(d) **PLUMBING OR SANITARY ENGINEERS**

Name of Firm or Individual Mr. Edward Peterson
 Business Address Bureau of Ships, Navy Dept., Washington, D.C.
 Neiler Rich & Bladen
 431 S. Dearborn St., Chicago, Illinois

(e) **LANDSCAPE ARCHITECTS**

Name of Firm or Individual Mr. Austin Floyd
 Business Address Forwarding Address-Robinson Hall, Harvard University,
 Cambridge, Massachusetts.

(f) **Radio Engineers:**

Capt. H. E. Bernstein
 Electronics Division
 Navy Dept., Bureau of Ships
 Washington, D.C.

6. OTHER REMARKS RE QUALIFICATIONS:

(Append extra sheet if necessary)
 Several Beaux Arts Institute of Design First Medals 1936-1938. On graduation from Illinois Institute of Technology (Armour) was presented (JE'38) with American Institute of Architects an award for scholarship & Charles L. Hutchinson Medal for highest record in Architectural design Publication, Architecture, Armour Engr. & Alumnus March 1939. Publication (Contribution to) "A Program for City Reconstruction" Arch. Forum July 1943.
 Prize Insulux Glass Block Competition, Architectural Forum July 1943
 Awarded Navy E Naval Ordnance Laboratory, Washington D.C. 1943
 Award (Beneficial Suggestion) by Vice Admiral Cochrane, Chief BuShips, Navy Dept., Wash., D.C. Jan 1945.
 Publication - Solar House, Architectural Forum, Nov. 1945.

7. SUMMARY OF PROJECT COSTS:

	Largest Single Job	All Jobs Valuation	Annual Average
Work Completed 1930-1940	\$2,000,000		
Work Completed 1941-1946	See attached sheets		
Current Work under construction or working drawings authorized	\$24,000,000		

8. REPRESENTATIVE WORK FOR WHICH YOU WERE ARCHITECT OR WERE ASSOCIATED WITH OTHERS: See attached sheets.

(a) Three Projects Not Exceeding Cost of \$300,000:

Name of Project	Cost	Location	Owner
Scott Hall	\$300,000	Evanston, Illinois	Northwestern University

(b) Three Projects Costing From \$300,000 to \$1,000,000:

Name of Project	Cost	Location	Owner
Hotel Congress (Remodeling)	\$1,000,000	Chicago, Illinois	Hotel Congress

(c) Three Projects Costing Over \$1,000,000:

Name of Project	Cost	Location	Owner
Abott Hall	\$1,750,000	Evanston, Illinois	Northwestern University
Electronics Facilities	\$24,000,000	---	Navy Department

9. PHOTOGRAPHS/PHOTOSTATS:

The author submits herewith photographs or photostats (size 8" x 10") of several buildings for which he has been the Architect, as follows: (N.C.A.R.B. presentation acceptable.)

.....
.....
.....
.....
.....

10. COLLABORATION WITH JUNIOR ARCHITECTS:

(a) If an established individual or firm, are you willing to collaborate with other firms or individuals which would permit junior architects to qualify and help further their professional careers?

.....

(b) If in private practice at this time, name associates (if additional architects are to be added to your organization) for the purpose of qualifying:

.....
.....
.....

(c) If **not** in private practice at this time, name established architect or firm with whom you have agreed to collaborate, for the purpose of qualifying:

.....

11.(a) I/We wish to be included in the **Architects' Roster**
~~do not wish to be~~

(b) I/We would like to be considered for the **Register of Architects Qualified for Federal Public Works**
~~do not wish to be~~

I/We hereby certify that the above is a true statement of facts.

Name of Firm or Individual **DAVID BAKER, Architect**

Signed by all Principals: *D. Baker*

.....
.....
.....
.....



STATE District of Columbia
CITY Washington COUNTY _____
DATE March 3, 1953

ARCHITECTS' ROSTER QUESTIONNAIRE

TO EVERY ARCHITECT IN THE UNITED STATES AND ITS POSSESSIONS:

The Architects' Roster is maintained by The American Institute of Architects as a service to the profession as a whole and to agencies of the United States Government. Every registered architect, whether or not a member of The Institute, is eligible for inclusion in the Roster. The Institute maintains custody of the Roster, keeps it up to date and in good order for use. The Roster is available to any representative of the Government and to representatives of foreign governments in Washington. Reference may be made to The Architects' Roster in negotiations with government agencies and other interested parties. Experience with the Roster since its establishment in 1946 has shown its usefulness. Growing out of an earlier Register of architects qualified for public works, The Roster provides at The Octagon an accurate, current record of the qualifications and achievements of members of the profession. It allows a positive and helpful response to requests for factual information on architects, and in that way constitutes a service to the profession.

The American Institute of Architects assumes no responsibility for the accuracy of statements made in this Questionnaire. The obligation to maintain this record as a current description of an architectural firm rests with the firm, and supplementary record forms are available for this purpose.

PARTNERSHIPS SHOULD MAKE A JOINT RETURN ONLY.

Original and one copy to be mailed to THE ARCHITECTS' ROSTER, The American Institute of Architects, 1735 New York Avenue, N. W., Washington 6, D. C. One copy to be retained by the author.

- 1 a FIRM** (Indicate whether individual, partnership or corporation.) Individual
David Baker, Registered Architect, A. I. A.
- b FORMER FIRM**, Name if any Consultant
- 2 STREET ADDRESS** 2141 Sudbury Place, N. W., Wash., D. C. Phone RA 6-8975
- 3 YEAR ESTABLISHED** 1952

4 PERSONAL HISTORIES OF PRINCIPALS

Furnish data complete, but keep to essentials. Describe each member of firm individually; if more than four, append extra sheets.

David Baker

NAME OF PRINCIPAL

NAME OF PRINCIPAL

- a Date of Birth** 7 February 1917
- b Place of Birth** Chicago, Illinois
- c Education** Illinois Institute of Technology (Armour) Feb. '34-June '38 B.S. Architecture
 Illinois Institute of Technology (Armour) Sept. '38-June '39 -Graduate work full time
 Harvard University (Kendall Graduate Scholarship) Sept. '41-June '42 Masters Arch
 George Washington University (Naval Arch.) Aug. '43 - Diploma

d Experience Prior to Own Practice

(Give architect or architectural firm affiliations, positions held, and approximate dates of employment.)

- June '36-Feb. '40 (Temporary Equiv. to 1-1/2 yrs. full time) Earl Reed, Archt. Chicago
 Alphonso Iannelli, Industrial Designer & Sculptor, Chicago
 Thomas Shaver, Engr., Chicago, Sam A. Marx, Architect, Chicago
 J. Goldman, Architect, Chicago, Chicago Housing Authority
 Feb '40-Feb. '41 James Gamble Rogers, Archt., N. Y. C., Hatfield Electric, Chicago
 Neiler Rich & Co., Chicago
 Feb '41-July '41 E. Novak & Associates, Engrs. & Designers, Chicago
 July '41-July '42 Shaw Naess & Murphy, Archt., Chicago, Walter Bogner, Archt. Cambridge
 July '42-June '43 Naval Ordnance Laboratory, Washington, D. C. Mass.
 July '43-Nov '45 Bureau of Ships, Navy Dept., Washington, D. C.

(Continued on next page)

- e Commenced Practice**
- f Number of Years a Principal** 2
- g Architectural Licenses** (Give State, Number and Year issued.)
 Illinois #2921 May 1941 By written examination
 Massachusetts #90 May 1942 By oral exam., exhibits (exemp. of written)
 Illinois #860 Dec. 1945 Register Prof. Engineer
 Washington, D. C. #549 Jan. 1947 By written examination
 Maryland #748R Oct. 1951 By satisfactory evidence of qualifications (exemption)
 National Council of Architectural Registration Boards 1947

h Membership in Professional Societies and Offices Held

- American Institute of Architects, Corporate Member
 American Institute of Architects In 1950 Chairman of Public Relations Commit

i Service in World Wars I and II (Append data if desired.)

j Civic Activities

- Member - Harvard Club of Washington, D. C.
 Member - Illinois Institute of Technology Alumni Association of Washington, D. C.

5 REMARKS CONCERNING QUALIFICATIONS OF FIRM

(This space is best used to present qualifying information such as number of employees, amount of office space, financial information and other information presumed of interest to a prospective client. Append extra sheet or use back of this form, if necessary.)

Several Beaux Arts Institute of Design First Medals 1936-38. On graduation from Illinois Institute of Technology(Armour) was presented (June'38) with American Institute of Architects award for scholarship & Charles L. Hutchinson Medal for highest record in architectural design. Publication, Architecture, Armour Engr. & Alumnus-March 1939. Publication (Contribution to) "A Program for City Reconstruction" Arch. Forum July 1943. Prize - Insulux Glass Block Competition, Arch. Forum Nov. 1939. Awarded Navy "E" Naval Ordnance Laboratory, Washington, D. C. 1943. Award (Beneficial Suggestion) by Vice Admiral Cochrane, Chief of Bureau of Ships, Navy Department, Washington, D. C., Jan. 1945.
Publication - Solar House, Architectural Forum, Nov. 1945
Publication - Design of a Naval Communications Station "Electronics Magazine" Nov. 1948

6 CONSULTANTS USUALLY EMPLOYED: (If a member of your staff, so state.)

a STRUCTURAL ENGINEERS

(Continued from previous page)

d Experience Prior to Own Practice

Name of Firm or Individual..... Nov. '45-June'49 Electronics Division, Bureau of Ships, Wash. 8, D. C. Consulting Architect for Electronics Division
Business Address.....

b HEATING AND VENTILATING ENGINEERS June'49-Apr. '50 Private Practice

Name of Firm or Individual..... Apr. '50-Feb. '52 Architect for Hdqtrs. Command,
Business Address..... U.S.A.F., Wash. 25, D.C.

c ELECTRICAL ENGINEERS

Feb. '52-Present Practicing as a principal.

Name of Firm or Individual.....
Business Address.....

d PLUMBING OR SANITARY ENGINEERS

Name of Firm or Individual.....
Business Address.....

e LANDSCAPE ARCHITECTS

Name of Firm or Individual.....
Business Address.....

f OTHER (Civil, Foundation or Mechanical Engineers, Appraiser, Equipment Designers, Valuers, Industrial Layout Engineers, etc.)

.....
.....
.....
.....
.....

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8 PHOTOGRAPHS/PHOTOSTATS

Not mandatory. Submit herewith photographs or photostats (size 8" x 10") of several buildings for which you have been the Architect, as follows: (N.C.A.R.B. presentation acceptable.)

(1) Solar Space House - Washington Star - November 1, 1952 - Publication.

(2) U.S. Naval Radio Transmitting Station, Dixon, Calif. - Electronics Magazine - November 1948 - Publication.

9 COLLABORATION WITH OTHER ARCHITECTS:

a As an established individual firm, are you willing to collaborate with other firms or individuals?

Yes

b Are you and/or your firm agreeable to accepting supervision of work where designs are produced by others— or vice versa?

Yes

c List firms (or individuals) with which you are associated at present or have an associate or working agreement: (Please furnish a letter from the other party verifying the association.)

Associated with Dr. Walter Gropius, Chairman, Department of Architecture, Harvard University, Cambridge, Mass. on specific professional work in the vicinity of Washington, D. C. (Photo copy of letter attached.)

10 THIS QUESTIONNAIRE MAY BE MADE AVAILABLE TO GOVERNMENTAL AGENCIES

yes

no

The undersigned hereby certify that the above is a true statement of facts.

Name of Firm or Individual.....

David Baker, Architect

Signed by all Principals:.....

D. Baker

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the architects' collaborative

jean fletcher A.S.P.A.
norman fletcher A.S.P.A.
walter gropius A.I.A., A.S.P.A.
john harkness A.S.P.A.
sarah harkness
benjamin thompson A.S.P.A.

June 9, 1947

Mr. David Baker
Consulting Architect
Electronics Division
Navy Department
Bureau of Ships
Washington, D. C.

Dear Mr. Baker:

This is to confirm that I, Walter Gropius, and my partners, known as The Architects Collaborative, Cambridge, Massachusetts, have associated themselves with you, David Baker, Architect, Washington, D. C., for professional work within the region of the Nation's Capital.

Sincerely yours,



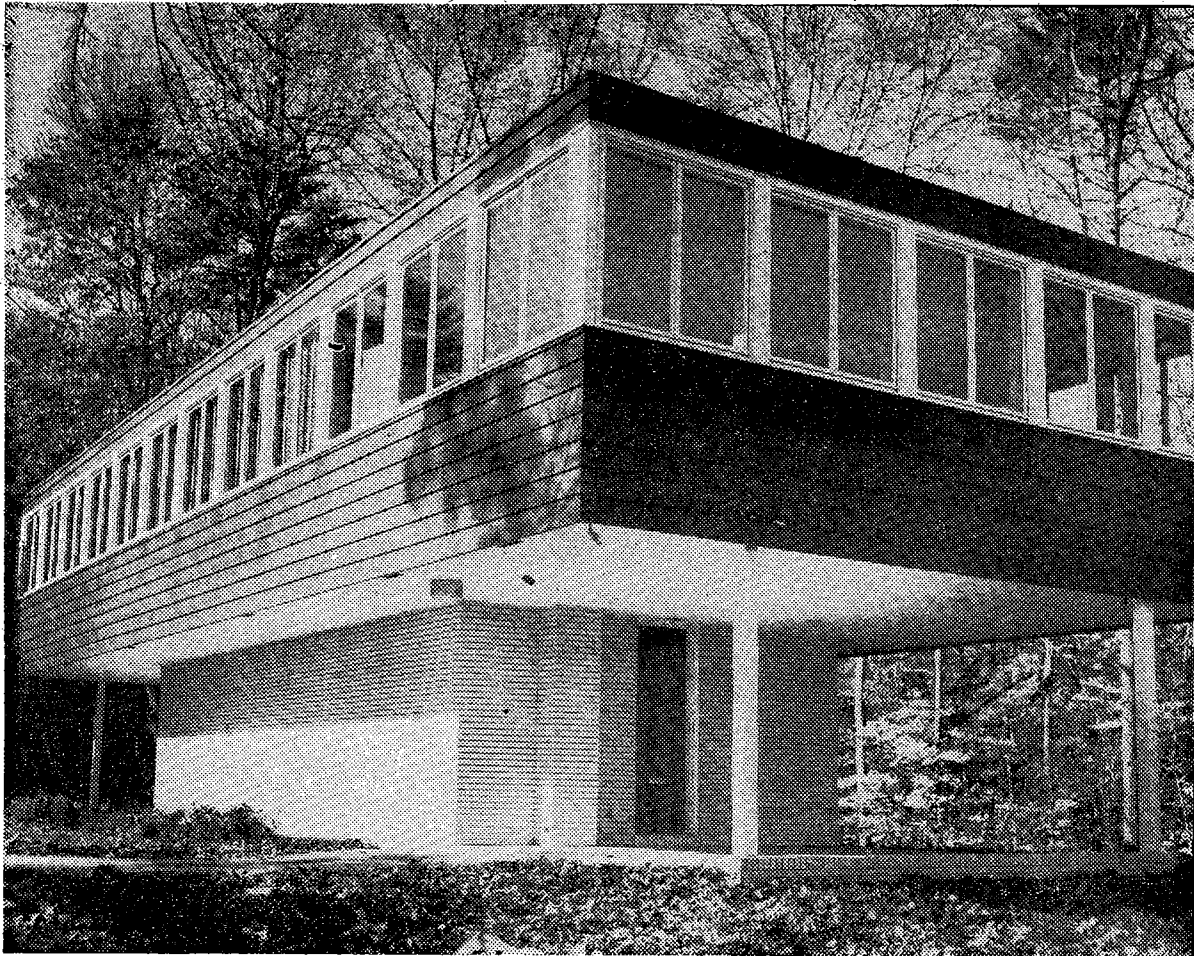
Walter Gropius

WG:S

BUILT FR

The Roof Doesn't Rest on the House the House Hangs From the Roof

tion



—News Staff Photos
Architect David Baker's Solar-Space House on Sudbury Place nw, showing the entrance off the carport.

A practicing Washington architect today has come up with a house for himself in Rock Creek Park that's been an eye-catcher ever since he started work on it about 10 months ago. Instead of building his house from the ground—or under the ground—up, David Baker, a registered member of the American Institute of Architects, had his home built from the roof down.

STEEL FRAMEWORK

To accomplish this, Mr. Baker used a steel beam framework from which to "hang" his house. The roof went on first, then the floor, followed by the walls and what would be the basement in a conventional house. Consequently, no wall carries any weight other than its own.

Mr. Baker, who has a copyright on his Solar-Space House, says he designed his home for "flexibility" and "maximum use" of each room. It was built, of course, to his own requirements.

"But it is equally possible," he



reation room that leads to a patio, a bath and storage closets.

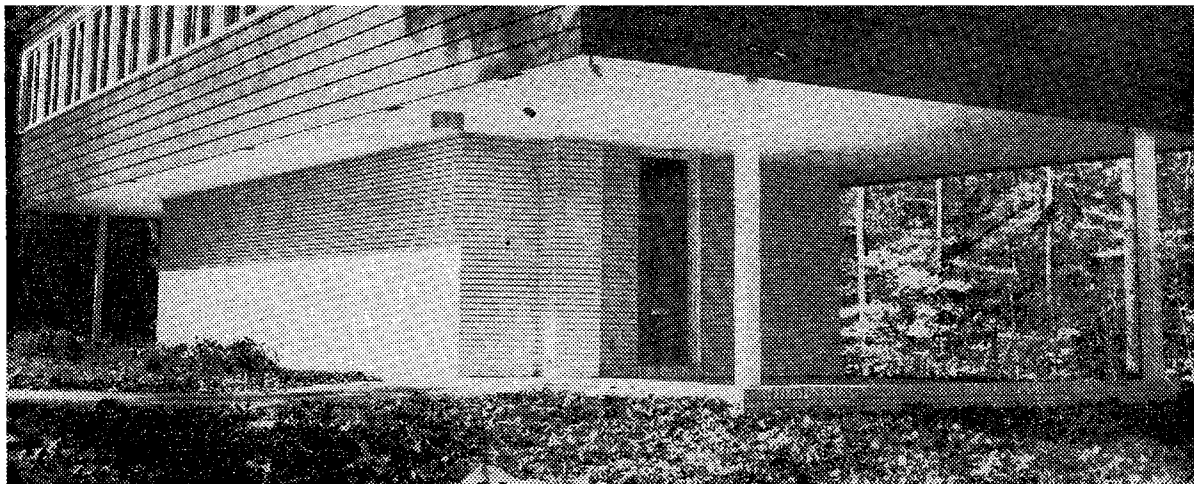
SERVICE LINES BURIED

There are no overhead wires leading to the house. Power and phone lines have been run underground from the pole at the street.

Mr. Baker's house will be open Sunday from 1 to 5 p. m., Wednesdays from 7 to 9 p. m. and from 1 to 5 p. m. on following Saturdays and Sundays under the sponsorship of Marjorie Webster Junior College. All proceeds will go into the alumnae association benefit scholarship fund. The house will also be open Thanksgiving Day from 1 to 5 p. m.

FRONICS, November 1948
ed) by McGraw-Hill Pub. Co., Inc.
New York 18, N. Y.

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—News Staff Photos

Architect David Baker's Solar-Space House on Sudbury Place nw, showing the entrance off the carport.

A practicing Washington architect today has come up with a house for himself in Rock Creek Park that's been an eye-catcher ever since he started work on it about 10 months ago.

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Mr. Baker, who has a copyright on his Solar-Space House, says he designed his home for "flexibility" and "maximum use" of each room. It was built, of course, to his own requirements.

"But it is equally possible," he said, "to arrange the rooms according to the requirements of another family all within the given volume of the exterior walls and room of the house."

He explained that by this he means the walls, since they don't bear any weight, can be put in any position within the house. They can, if desired, be installed on a temporary basis and be moved from time to time as the family grows or as its members grow up and leave home.

'MODEST' BEDROOMS

As it is now, Mr. Baker's house, on the circle at the end of Sudbury Place nw, has two bedrooms, both of "modest size," because bedrooms today are not "the center of a great deal of family living activity" as they were in the past.

The bathrooms have been located so they may be reached from more than one direction.

The kitchen is laid out in an efficient U-shape, with the laundry room right next to it.

"The Solar-Space House plan recognizes that the average housewife spends most of her time preparing meals, doing laundry, and supervising children," Mr. Baker said. "It also realizes that she has a



DAVID BAKER

fondness for radio and television programs."

To satisfy her needs all at once, the sink is placed in such a manner that she can look thru the window above the sink into the room opposite the kitchen and watch television or the children, or entertain guests while she does her chores.

The living-dining room, instead of giving the impression of being just one room, has a square pillar just off its center to give the effect of a division.

Entrance to the house is thru the "basement," which holds the year-round air-conditioning units, a rec-

reation room that leads to a patio, a bath and storage closets.

SERVICE LINES BURIED

There are no overhead wires leading to the house. Power and phone lines have been run underground from the pole at the street.

Mr. Baker's house will be open Sunday from 1 to 5 p. m., Wednesdays from 7 to 9 p. m. and from 1 to 5 p. m. on following Saturdays and Sundays under the sponsorship of Marjorie Webster Junior College. All proceeds will go into the alumnae association benefit scholarship fund. The house will also be open Thanksgiving Day from 1 to 5 p. m.

IRONICS, November 1948
ed) by McGraw-Hill Pub. Co., Inc.
New York 18, N. Y.

NAVY

Design of a Naval Communication Station

By **DAVID BAKER**

*Architect
Electronics Division
Bureau of Ships
U. S. Navy
Washington, D. C.*

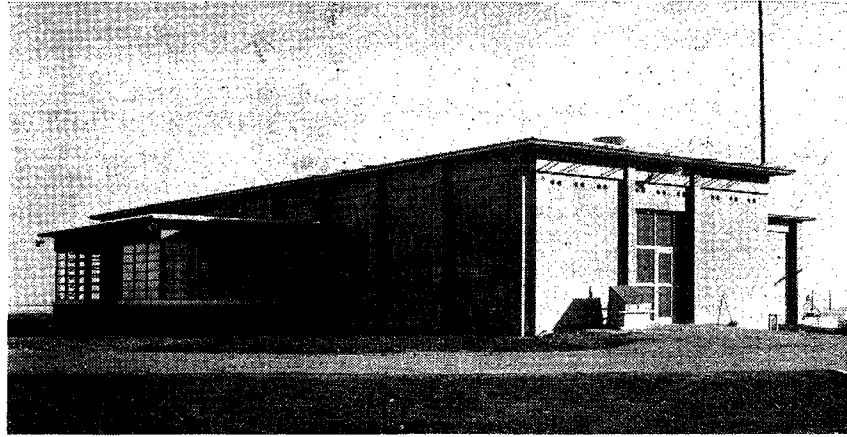
Reprinted from **ELECTRONICS**, November 1948
Copyrighted (all rights reserved) by McGraw-Hill Pub. Co., Inc.
330 W. 42nd St., New York 18, N. Y.

By **DAVID BAKER**

*Architect
Electronics Division
Bureau of Ships
U. S. Navy
Washington, D. C.*

Design of a

Naval Communication



Exterior of Dixon, California station. Holes under cornice are for feeders

New unit planned for pleasing appearance, operation by minimum of personnel, and capable of rational expansion stands at hub of rhombic array system. Deterioration of reinforced concrete structure is inhibited by novel method of bonding the rods

TO SET the best possible example in its postwar construction, the Office of the Assistant Chief of the Bureau of Ships for Electronics, in cooperation with the Bureau of Yards and Docks, has attempted to evolve a basic layout for the United States Naval Radio Transmitting Station at Dixon, California, which will function with a minimum number of personnel, provide low maintenance cost, and solve all probable expansions in the future.

The building expresses a definite architectural character rather than a box-like interpretation, by locating the columns which support the roof loads on the outside of the exterior wall, on centers of about 13 by 40 feet. This arrangement provides for a clear wall surface on the interior of the building and allows for ease of cleaning and lowered maintenance cost. It provides unobstructed maximum working area around the transmitters, and makes possible the running of transmission lines without any obstructions whatsoever within the transmitting room.

In order to obtain a flexible

arrangement for routing incoming transmission lines to the various transmitters, seventy-five pairs of entering insulators are located beneath the protecting cornice of the building. Thus, a line can be pulled tight and held fast on the transmission line anchor, then looped under the cornice and into the feed-through insulator.

Internal Wiring

Cableways are used for cable, conduit, bus bars, piping, and the like, in lieu of an alternate design which would have necessitated that the transmission room be on a second floor, with access to cables arranged in continuous hangers from the ceiling below. Low cost in installing cable is made possible by the ease with which it can be rolled off reels over the main cableways without moving any equipment to do so. The equipment is installed directly over an adjacent system of small feeder trenches.

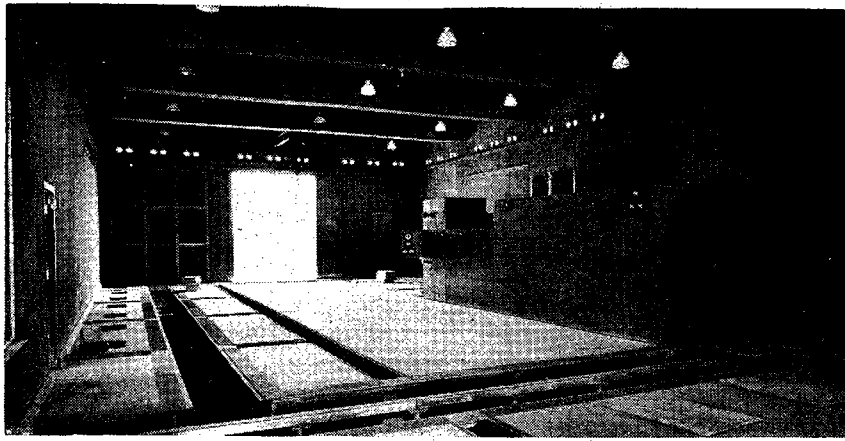
The floor material finish is terrazzo, ground smooth and divided into squares. The brass strips ordinarily used for dividing terrazzo

could prove electrically dangerous to the personnel in the transmitter room, so plastic strips are used instead. Contrasted with a painted concrete surface, battleship linoleum, or asphalt tile, terrazzo fully meets the need of a good wearing surface capable of resisting heavy loads, and is easily maintained and kept clean.

Trucks for carrying equipment for the initial installation or any emergency find easy access through large aluminum sliding end doors. An overhead rail for supporting a hoist is utilized over the end bays of the transmitter room. Thus, equipment is lifted from a truck by means of the hoist to a hand-steered electric-powered transporter.

Air Conditioning

This windowless building, save for the administrative portion and the lavatory, is ideal for air conditioning. In addition, it keeps the building insect-proof, a vital consideration, because bugs have a tendency to work their way into transmitter equipment. The out-



Interior showing main switchgear, main and branch cable runways with covers removed

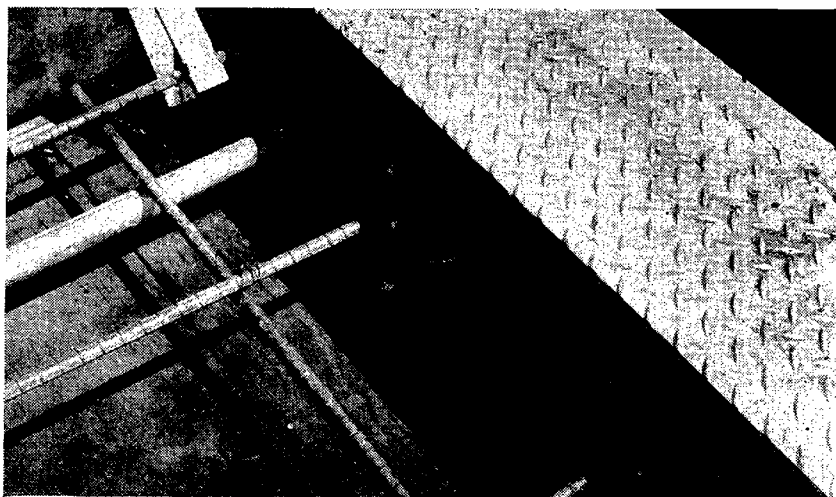
Station

side wall acts as a blast-resisting surface and the inside face provides a good light-reflecting surface.

In the normal course of operation, sufficient heat is generated by the transmitters to heat the building. This warm air is therefore recirculated and utilized for heating, being tempered by cool fresh air. A cooling system for warm weather utilizes the same duct system. The air in the ducts is maintained at a constant 70 to 75 degrees in the summer and winter. In the event of a transmitter shut-down, a boiler is provided as an auxiliary source of heat. Controls provide for automatic operation.

Designed for construction when future commitments so require is a vhf and shf tower which will be located over the loading platform at the rear. The cantilever floor of the tower provides a 360-degree area for spacing line-of-sight link antennas of the parabolic-reflector type.

Antenna switching will be accomplished by a system of hand-wheel switches that may later be remote controlled. The completed unit will be suspended from cross members framed into sidewall angles or channels in lieu of suspending the units from the ceiling or concrete girders.



Detail of brazed bonds between reinforcing rods, structural members and conduit

The antenna arrangement consists of a number of rhombic transmitting antennas erected circularly from the transmitter building. The antennas are oriented in the specific direction in which the maximum signal is desired. The transmission lines run directly from the antenna to the antenna switching system, so that any transmitter can be connected to any transmission line. The transmission lines are 600-ohm open-wire type. The transmission-line anchors form an integral part of the building cornice design and, together with the antenna feed-through insulator, give the radio transmitting station its definite character.

Some previously erected reinforced concrete transmitting buildings have suffered partial disintegration owing to expansion of reinforcing rods at a rate faster than that of the concrete surrounding them. This heating was caused by absorption of stray radio-frequency energy. Appreciable energy can be picked up by rods that are resonant at full, half, or quarter wavelengths. Negligible energy is picked up at an eighth wave or less.

Grounding

Since the shortest wave at which appreciable power is to be radiated at the station is 12 meters, only ungrounded rods above 5 feet in length needed special treatment. Accordingly, all steel reinforcing rods are rigidly and continuously bonded to ground by arc welding or brazing. In addition, bonding wires are provided to ground as a precaution against breakage of the rod junctions during the vibrating of the concrete in the molds. Metal doors, window frames, and the like are bonded to the reinforcing steel. Conduit is tied in at least every 20 feet. All mechanical equipment is grounded separately with No. 6 or larger copper wire. The grounding system in the cableways consists of a network of $\frac{1}{8} \times 2$ -inch copper bars. Ground rods are $\frac{3}{8} \times 10$ -foot copper-covered steel with No. 2/0 stranded copper cable for connection to the reinforcing steel. This system is then tied in with the external underground network surrounding the station, and used with the antenna systems.

ATOMIC ENERGY

Forum:

It is surprising to see published in the current April 1948 FORUM a proposal by Churchill-Severud for an atomic city, conceived in terms of a geometrical study in circles and hexagons. This layout does not seem to adequately provide for city functions, nor could it by any stretch of the imagination withstand atomic warfare.

The nature of atomic energy, and the type of resultant damage which may be caused by an atom bomb explosion is neither completely nor effectively reflected by the Churchill-Severud city plan.

There is no more appreciative difference in the pattern of this layout than there was in the type of city which was designed in the year 1567 by Pietro Cantaneo who invented the many angled plan with the central citadel as fortification against the artillery of that day. In more recent times the Maginot Line was built as an answer to the heavy artillery of World War I, but the bombers of World War II soon antiquated the Maginot Line and proved its obsolescence. Proof of the destructive force of the bomber was the damage imposed upon the seemingly defended Dutch city of Rotterdam in 1940. The lessons of World War II have heralded the necessity for new defense patterns by the advent of the atomic bomb, and the guided missile.

Perhaps the structural concrete forms of this city plan as proposed would resist an atomic blast or pressure force at certain distances from ground zero of the explosion, but that is all. If a Nagasaki type atom bomb detonated at the center of the honeycomb pattern, the following damage would in all probability result:

(1) Each hexagon cell of the honeycomb, confined within a diameter of approximately 3,000 ft., makes a confined and vulnerable target with respect to the atom bomb as well as other destructive missiles.

(a) The experience of World War II indicates that congested central areas cluttered with buildings similar to this sketch make any defense plan difficult.

(b) In contrast, small concentrations of residential building units in open spaces present small targets and an area which is more easily protected. Experience indicates that open areas between building groups are immensely important, for a blast is more easily expended and is less effective in air.

(1) The most successful type of residential district could consist of apartment type buildings separated by large spaces. This offers less target area than other arrangements of housing. With this type of building layout bombproof shelters may be distributed according to a rational and strategic plan. The scale of the distance of people to shelters becomes determined by the ability of people to run to them, for that is precisely what they would tend to do in an emergency. In medium height buildings, apartment dwellers can be rapidly transported to shelters by the shortest routes, partly subterranean.

(2) In the event of a direct hit by an atom bomb on the center cell of the honeycomb, the interior area would be completely destroyed, and in all probability the hexagon structural concrete shelter system would be greatly damaged because its complete enclosure would offer resistance to the blast and thereby serve to intensify the shock waves.

(a) In the event of a direct blast, persons within the shelters would be physically injured due to the secondary effect of the blast as it reaches those shielded, for pulses are transmitted throughout a stricken object.

(3) The large radius of this honeycomb atomic city is noted to be approximately 4,500 feet. If the dwellings which are shown in each hexagonal cell are of ordinary construction, as the plan seems to indicate, then nearly all of the dwellings of this city proposal would be damaged beyond normal repair.

(a) At a distance of 6,000 feet the pressure of a Nagasaki model atomic bomb is about a ton per square foot or 2,000 pounds. Most American skyscrapers are designed to resist a horizontal force of 30 to 60 pounds per square foot or a hundred mile an hour wind, and consequently they would collapse.

(b) If the hurricane type of horizontal force is impeded somewhat by the protecting hexagon shelters, then the suction wave of the blast which follows the pressure wave would complete the damage.

(4) The atom bomb is essentially a poison weapon.

(a) An atom bomb exploding at the center of the middle hexagonal cell would emit gamma rays which would penetrate these structural concrete shelters and

cause slow death to a great portion those who have sought refuge in shelters, permanently disabling other

(b) Neutrons penetrating these shelters could reach those presumably protected and induce harmful radioactivity in body.

(5) There is an absence of all important green-belts of foliage about this city. Green-belts are a necessity to minimize great intensity of visible light which emitted by an atomic bomb explosion.

(a) The intensity of unshielded visible light traveling at the rate 186,000 miles per second, could cause temporary blindness to persons beyond the radius of the atomic city proposal.

Although the Churchill-Severud plan for an atomic city which appears in the Architectural FORUM does not have a proper perspective of the nature of atomic energy and appears to be impractical, there is need for alarm. There is ample evidence that what is best for peacetime is also best in war. The decentralized city planning the type which was proposed in the June 1943 Architectural FORUM as "A Program for City Reconstruction" and which was also published on page 213 of the book "Can Our Cities Survive" by J. L. Spang and *Congres Internationaux d'Architecture Moderne* appears to be a step in the right direction. Although the single township shown could not resist an atomic blast, construction of properly designed dwelling units plus strategically located shelters could be achieved.

All of the factors, social and economic as well as those for atomic and bacteriological defense, and based upon the human scale of values, are necessary considerations to guide the architects, city planners and engineers in order to evolve proper community patterns for the function of an atomic city. It is recommended that when planning cities to resist an atomic explosion, close consultation with the nuclear physicist and electronics engineer who are experienced to advise in atomic energy problems of this sort would be a requirement. The Churchill-Severud idea for an atomic city above ground may be workable, but certainly not along the lines of confined planning which their sketch in the Architectural FORUM clearly indicates it to be.

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