Washington Council
American Institute of Architects

A Journal of Design & Construction

November·December 1979

Comment

An Exhibition Celebrating Architecture of the 70's

by GORDON E. RUEHL, AIA
President
Washington Council,
American Institute of Architects

With this issue of *Northwest Architecture* the curtain closes on another decade — the decade of the 70's. Looking back on the past 10 years, one sees a period marked with "change", most for the better some for the worst. I refer to our changing social patterns and life styles, the great deluge of technological advances, the rapidly escalating prices and increasing interest rates, and perhaps, most significant of all, our growing awareness that "more is not necessarily better." We are coming to the realization that our natural resources are limited and that man had better be more mindful of his role as caretaker of this planet.

All of these changes lead me to consider the decade to be one of transition, calling for adjustment in our attitudes and actions. I might add that this transition hasn't always happened without turmoil or at least a little inconvenience on the part of us all.

Just as architecture of the past has reflected the influences of the day, so the architecture of the 70's has been affected by its period in history. Growing energy issues, environmental considerations, and the efficient use of materials and space have given rise to a new vocabulary which includes such words as "energy standards," "environmental impact statements," "value engineering," "life cycle costs," and building retrofitting." Through it all, quality design has prevailed, and our profession has turned complication into achievement.

In order to document this point, the Washington Council, American Institute of Architects has drawn together an exhibit of quality projects, selected by jury, to represent the outstanding accomplishments of Washington architects. The exhibit has been assembled from some 120 preliminary submissions and has been adjudicated by a jury made up of architect Robert Frasca, FAIA, of the Portland firm of Zimmer, Gunsul, Frasca; architect George Hasslein, FAIA, Dean of the School of Architecture and Design, California Polytechic Institute; and, its public member, John Mihalyo, Managing Editor, Seattle Daily Journal of Commerce.

The 49 selected projects, all completed or under construction since January, 1970, will tour our state in the coming months, sponsored by the five local American Institute of Architecture Chapters. In addition, it will be used as an educational tool in schools and will serve as a report to our Legislature illustrating how public funds have been expended. It will also be available for various trade shows and other public exhibits upon request.

In the words of the Jury:

"(Design) Excellence is a rare combination of events and people and not magic. The combination makes it take place. The State of Washington in some cases has experienced that rare circumstance in both its private and public work. On the whole, the State can look with pride on its accomplishments in the buildings of the 70's."

"It is important to look back on the 70's, to learn from them and use that knowledge for the 80's. The State of Washington is in the midst of its greatest boom — it's the time when the lessons, if there are any, can be of the greatest use."

"The emphasis of the 80's will be on managing the urban growth and preservation of our quality of life."

It is our hope that by exposing quality architecture we will increase public awareness and, therefore, encourage a deeper design appreciation leading to a better and more respectful living environment in the future.

We invite each of you to visit this splendid exhibit of Washington Architecture of the 70's when it appears in your locality.

Washington Council
American Institute of Architects

Northwest Architecture

The Cover Romney Cave, a residence at Yakima, Washington. Page 6. Special effects photography for cover: Ed Maquand.

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Organizations

Washington Council, AIA

by BLAIR PATRICK, CAE
Executive Director
Washington Council
American Institute of Architects

The Washington Council, American Institute of Architects is a statewide organization representing the interests of more than 2,400 registered architects in Washington State. Members from private firms (sole proprietorships, partnerships and professional service corporations), corporations, industry, government and education have joined together to promote architecture as a profession.

The Washington Council is dedicated:

- to insuring the advancement of society's living standards through an improved environment;
- to ever increasing the architectural profession's service to society;
- to promoting the aesthetic, scientific, and practical efficiency of the profession of architecture; and,
- to coordinating the building construction industry and the profession of architecture.

The Washington Council, with headquarters and staff located in Olympia, Washington, is composed of five chapters across the state. The organization has three major missions:

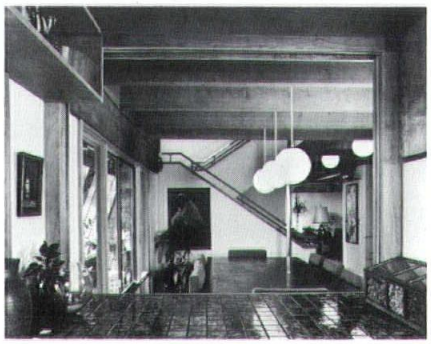
- to represent the profession with state government, building construction industry groups and the public so that good design is encouraged by law and demanded by society;
- to maintain and improve the competence of today's practitioners; and,
- to develop well-trained practitioners for tomorrow.

The Washington Council's programs and activities are guided by its officers, board of directors, committees, and members and are carried out by its members and staff at state and local levels. The Washington Council's programs are financed through members' dues and include continuing concern with architectural design, structure, and materials; business and production aspects of architectural practice; architectural education and research; urban design; public affairs; governmental affairs; inter-professional and industry relations; and other subjects of interest and importance to the Washington Council's membership and to the public.

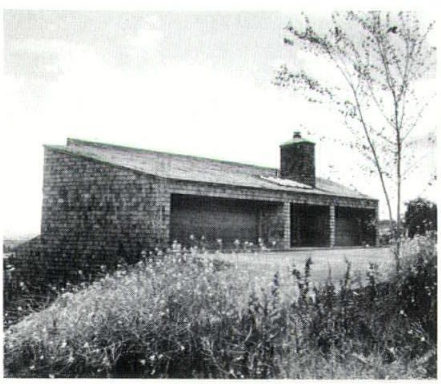
The professional architect knows that the practice of his profession represents a grave responsibility, not only to his client, but to the public interest. The proper discharge of this responsibility requires devotion to competent, ethical, impartial, and fair service. Such responsibility obviously requires persons of the highest ethical as well as professional standards. The best way to find such a person in an architect is in a name which is followed by the title — AIA.

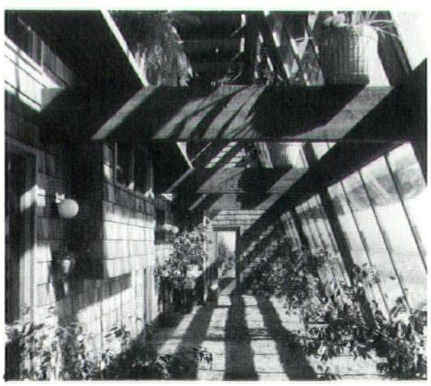
The title AIA identifies members of The American Institute of Architects, the national organization representing the architectural profession in the United States. The AIA title identifies a professional society member who has accepted the highest standards of professional competence, moral duty, and human character any profession can devise. The title AIA has come to be known by the public, the government, and the building industry as a symbol of professional merit.

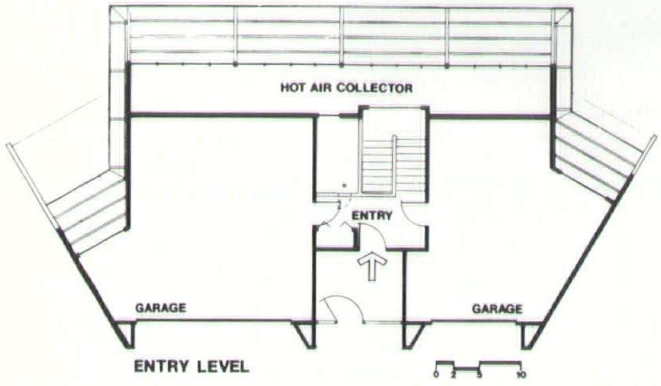
Romney Cave, A Single Family Residence

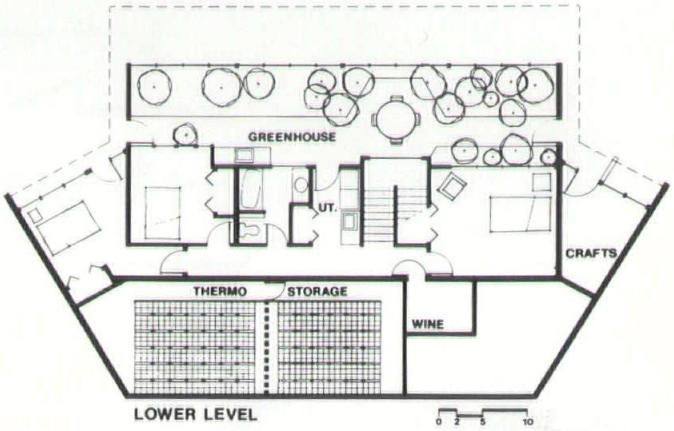


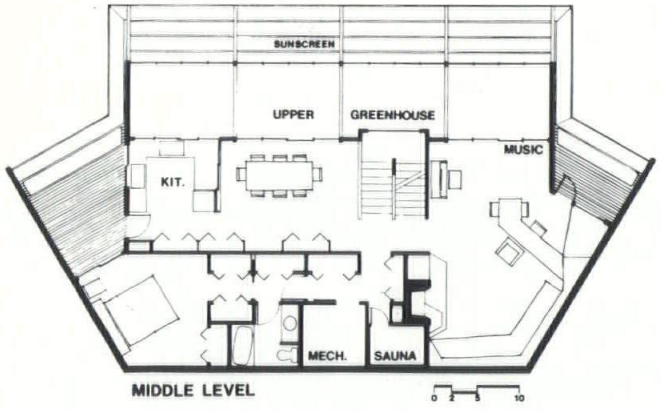
Project	Romney Cave Yakima, Washington
Owner	Dr. & Mrs. G.D. Romney
Architect	Knipper Dunn Partnership, AIA
Mechanical Engineer	Glenn Ward
Contractor	M.F. McDonald Construction
Photographer	Mary Randlett

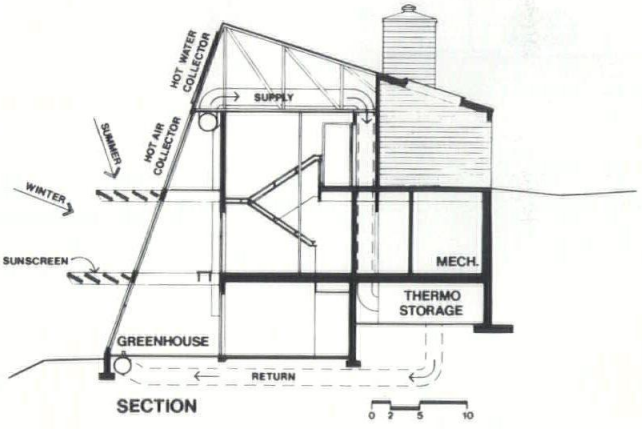












In a refreshingly open atmosphere between owner and architect, the designers were directed to examine any and all alternatives to take advantage of Yakima's weather conditions and were encouraged to study building materials and/or systems. The owner was also open to any spatial arrangements or size reduction of rooms that would reduce the energy load as well as any construction methods or materials that would serve to accomplish this goal.

In researching the program, the architects explored the solution Southwest Indians had found to energy problems since Yakima is much like the Southwest with hot summers and cold winters. The Indians found that a cave with a southerly exposure provided ideal heat gain in winter, cooling in summer.

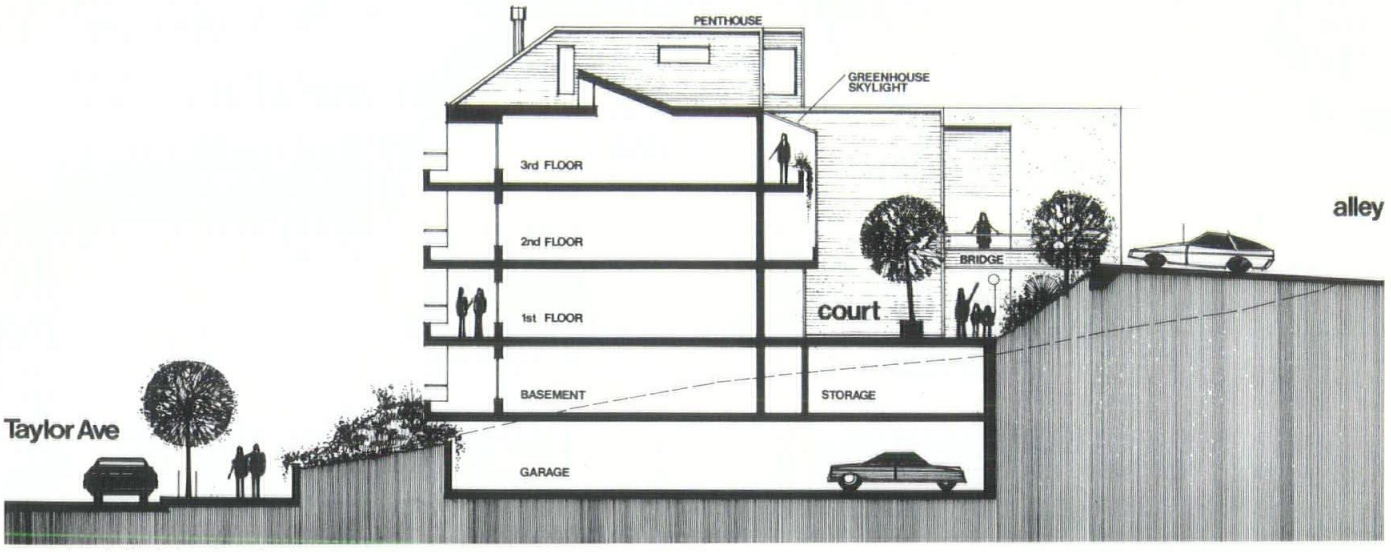
The research was adapted to Romney Cave, as the project is called. The single family residence, designed for a family of four plus college age youth, is surrounded by solar space and earth. The building is backed into the steep hillside with a three-car garage on top. A greenhouse covers the south side. Temperatures in solar spaces are allowed to fluctuate between 40° and 90° (there is generally a 40° swing between day and night during the summer in Yakima.)

An active four mode air collection and storage system was added to the inherent passive design: (1) heating by solar, then heat pump; (2) cooling by storage room air, then heat pump; (3) greenhouse cooling by evaporative cooler; (4) night cooling by using parts of above components.

Red cedar shingles were selected as the exterior skin with the maintenance, insulation, appearance and first cost important factors in the selection of this siding.

The house was completed in November 1978.

Atria Village Apartment Complex



Project	Atria Village Seattle, Washington
Owner	David & Corrine Breiwick
Architect	El Baylis Associates
Structural	Engineers Northwest
Electrical/ Mechanical	Hargis Engineers
Contractor	Molvik Construction
Photographer	Vern Green

Today's apartment market indicated a multi-solution for Atria Village, a 26-unit apartment complex on Seattle's Queen Anne Hill.

The owners asked for an economical building of sufficient quality for a long-term investment and a competitive position in the current market, with a unit mix which would maximize rental income. The architects were further asked to relate the building to the established multi-family and single family hillside neighborhood and to take advantage of the view.

A combination of one, two bedroom and luxury penthouse units achieved the maximum income potential. All units feature a view-oriented deck.

The shared spaces designed into the complex addresses inclement weather by maximizing natural light sources from the south and west. A central sunken courtyard at the first floor provides outdoor space for tenants, buffered by a landscaped embankment. The courtyard permits light and air into a first-level glass walled corridor.

The guest entry is at the second floor via a bridge from guest parking to a skylighted lobby and two story "greenhouse" enclosed balconies. This greenhouse atmosphere provides light to usually dark and uninviting corridors.

The wood frame building, with cast-in-place and precast concrete at sub-grade levels, features stucco and cedar siding exteriors. Completed in August 1978, the apartment was constructed at a cost of $20 per square foot.

Guest Editorial

Energy-Conscious Leadership

by DONALD F. BURR, FAIA

Perhaps the most significant condition affecting our nation's future during the next several decades will be the misuse and scarcity of conventional energies. Time is short. Massive conservation efforts and the use of new energy sources must take place.

Approximately one-third of all energy consumed in America is used to heat and cool buildings. The need to conserve the vast amounts of energy these buildings use and to prepare them to function in a post-petroleum world has brought about significant changes in design.

Solving the complex energy issues we face is not easy. The complexity itself is part of the problem we must solve. Most people do not have the time nor the information to totally grasp the energy situation.

Simply put, to achieve a high level of energy-efficient building design takes more time, expertise and a closer intergration of diverse disciplines than is now the rule in design. These adjustments cannot come about overnight since a new awareness, good intentions and additional regulations can only do so much. Trained and committed professionals, supportive clients, and the perfection and adoption of effective design tools are required. A more demanding and rigorous design process is necessary. Combined with these is the urgent need to define the architect's role in the energy situation.

Good buildings live a long time. Structures lasting into the hundreds of years are commonplace. Thus, it is essential to transform our current building inventory and the design of new structures to be both energy conservative and to use new forms of energy. These buildings will spend the majority of their lives in a world without traditional forms of energy as we know them today. Architects have a professional obligation to deliver structures—both new designs and the retrofitting of existing buildings — which are prepared to function in a post-petroleum world using only renewable energy resources.

Today there are two major thrusts required in building design. They are of equal importance, and both must be accomplished for each building project. They are as follows:

1) To design the building to conserve to the maximum extent currently used nonrenewable energy resources.
2) To prepare the building to function in a post-petroleum world.

Some view the energy situation as a maze of problems; it is easy to look at the energy situation in this manner. Tragically, this is a negative approach and, as such, becomes a deterrent to achieving successful energy-conscious design.

Because of their educational background and responsibility for much of the built environment, architects have major responsibilities in the transition process taking place in the world today. Our professional responsibilities are significantly increased because of the energy situation faced by our nation and the world.

We have the tools available to do the job. Some we have had for a long time, and we need to dust them off and put them to use. It is important to not be one of the group waiting for the "next model". In the design of buildings we understand more what to do to conserve energy and how to use new forms of energy than we do about solving many other parts of the energy problem.

An important point in understanding the design process is realizing that it is using many concepts integrated together which result in good energy-conscious design. A neat single package does not exist, and there is no indication that such a single device or package will ever exist.

In most cases, energy conscious design of new structures combined with retrofitting of existing ones enables a reduction in consumption of current nonrenewable energy from 50 to 75 percent. Combining conservation of energy of this magnitude with the preparation of buildings to function in a post-petroleum world will lead us towards a nation of energy-efficient buildings by 1990. The American Institute of Architects has made this major policy commitment.

Energy-conscious design is not easy. It requires extensive in-service educational endeavors which result in significant adjustments in the design process. We must recognize that at this time probably the majority of our clients, as well as our own membership, are ill informed about energy-conscious design and how to achieve it. The American Institute of Architects believes it is of great importance to seek ways not only to motivate the architects to design more energy-efficient buildings but also to challenge them to achieve buildings (both new and renovated) which will predictably use less energy.

The American Institute of Architects deems it essential to create an energy ethic and an increased awareness. The Institute has been placing and continues to place major emphasis on its energy programs. The work of The Institute's Research Corporation in the field of energy is carefully related to the Institute's energy programs. These research efforts contribute information necessary to properly manage the many energy efforts.

In a broad sense The Institute conducts its energy efforts to accomplish six goals. In very brief form these goals are to:

1) Improve energy design skills.
2) Overcome institutional constraints.
3) Expand the scale beyond single buildings.
4) Define the role of the architect.
5) Engage in "futuring" and to define the transition.
6) Develop economic policy.

A series of necessary work tasks has been developed to accomplish each goal, and these work tasks spread over six areas. These areas are: Research, Education, Practice, Government, Public Relations and Liaison. They are looked upon in the listed order.

The goals are far-reaching. The first — to improve energy design skills — is an obvious need. It is interesting to note the emphasis placed on educational curricula in the schools of architecture. The need to incorporate energy design information into the curricula of our architectural schools is urgent. This goal brings to the practicing architect continuing education programs, resource materials, design tools and necessary document assistance... all vitally needed to achieve a high level of energy-conscious design.

Overcoming institutional constraints is of major importance. Much work must be done in the area of codes, regulations and standards. These are obvious institutional constraints, but there are others of equal importance. There are many varied institutions which have natural constraints toward achieving energy-conscious design...these must be identified and overcome.

Expanding the scale of energy-conscious design beyond a single building to communities of various sizes is essential. Considering energy design needs from an urban scale as well as an individual building scale is a necessity if we are to achieve a nation of energy-efficient buildings by 1990.

The need to define the role of the architect is important. In the very busy life of an architect, it is difficult to always be abreast of everything which should be read and understood. Because of the energy situation there is great excitement and challenge to being an architect today if this role is understood.

People do things based mostly upon their sense of the future...their vision of what is to come in the immediate, short-range or long-range future. Architects particularly must nurture their ability to have a vision of the future. There are ways to improve the "futuring" process, and this needs to be part of the in-service educational work of our profession. Further, because actions and programs are based upon what one envisions the future to hold, it is essential the AIA leadership conduct its "futuring" in a very careful manner. It is important this leadership express its vision of the future on a regular basis to the membership because it is only through the understanding of this vision of the future by the leadership that the programs and actions it is engaged in have meaning.

The last goal — to develop an economic policy — is very important. Much of the energy situation is entwined with finance. Financial incentives to conserve energy are necessary. Help in forming such economic policies is important to achieve a nation of energy-efficient buildings.

It is imperative all architects use good energy-conscious design for buildings, not only for the devastating economic results if we do not but also for social purposes.

At no other time in recorded history has the very survival of our society seemed so dependent upon those who plan and design the built environment. A satisfactory future for our children and grandchildren is at stake. As architects, we not only must make certain we have become qualified to practice good energy-conscious design but also must assume leadership roles in our communities to help others understand the energy situation and what can be done about it in the design of buildings.

Donald F. Burr, FAIA, is a member of The American Institute of Architects' National Committee on Energy; is one of six in the Steering Group who writes energy policy for The American Institute of Architects; one of three charged with the responsibility of writing the American Institute of Architects' Energy Action Plan for 1980-1985; chairman of the International Energy Committee of the Council of Educational Facility Planners International.

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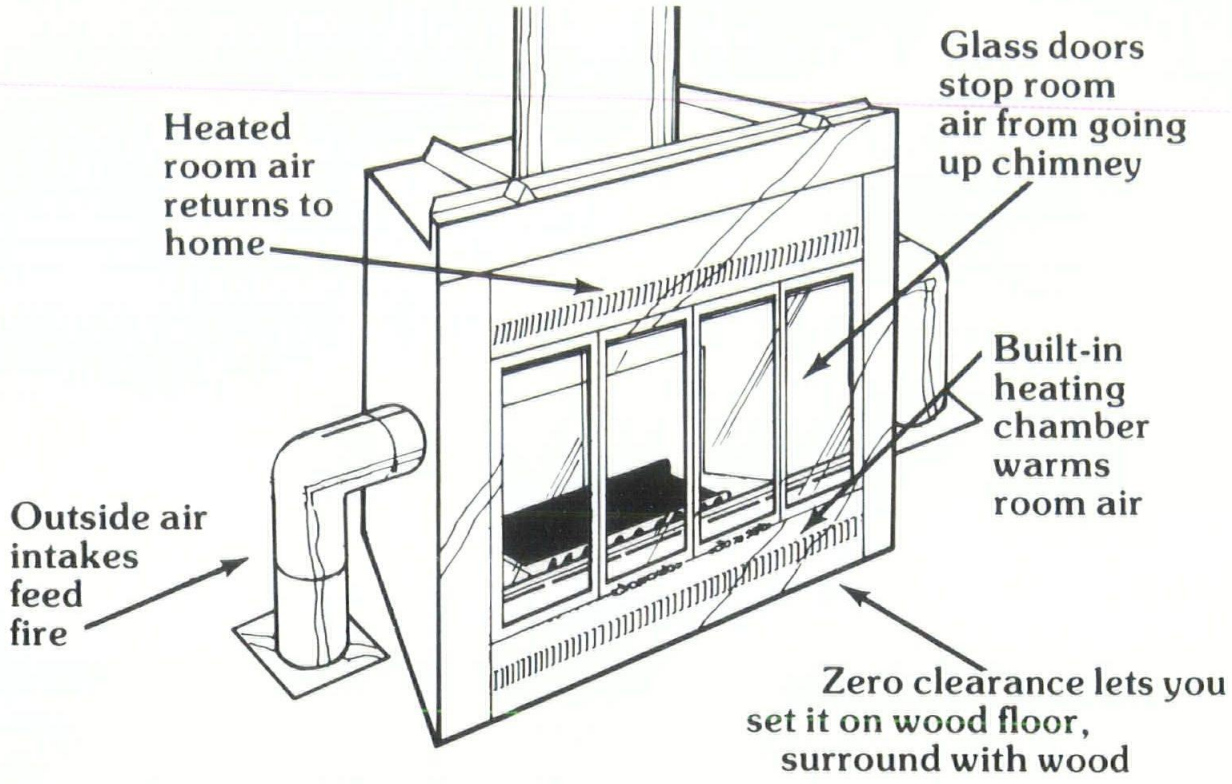

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People

Robin C. Calhoun, director of Seattle City Light's Office of Conservation since February 1977, has joined the Seattle Staff of Henningson, Durham & Richardson.

Leon D. Luck, Pullman, has been elected a director of the American Society of Civil Engineers, serving District 12.

Michael Garrett of the Barclay Dean Co., Seattle, has been named to the Washington School Facilities Cost Stabilization Advisory Board by Dr. Frank B. Brouillet, Superintendent of Public Instruction. Garrett, with over 20 years experience in the building industry, is a member of the Council of Educational Facilities Planners International, the Construction Specifications Institute, and the Producers Council.

Peter Rasmussen, AIA, Tacoma, partner in the firm of Rasmussen and Hobbs, Architects, has been elected to the Tacoma City Council.

With the appointment of **Ilmar Reinvald, AIA**, as a partner, architects **Bill Reed. AIA**, and **Ted Litzenberger, AIA**, announce the restructuring of the Tacoma firm of Harris, Reed, Litzenberger and Tsang to Reed, Litzenberger and Reinvald. The new partner, director of the school of architecture at Montana State University, Bozeman, for the past six years, will be located in the firm's Gig Harbor offices.

James Daly, AIA, partner in the Seattle architectural firm of Hewitt/Daly, has been reappointed to an architecture position on the Seattle Landmarks Preservation Board. Daly is currently board chairman.

People

Design Consultants, Inc., with **Herbert Wilkins, AIA,** as principal, has established offices at 2221 Riverside Drive, Mount Vernon.

Carolyn Geise, AIA, Seattle, has been appointed by Governor Dixy Lee Ray to serve a three year term on the Washington State Board of Registration for Architects.

Seattle landscape architects, Talley & Associates, has relocated its office to 310 N.E. 72nd Street.

Douglas E. Norberg has been elected Executive Vice President of the Howard S. Wright Development Company, Seattle.

Charles O. Russell has joined The McKinley Architects, Seattle, as director of business development. He was formerly director of planning for the Institute for Professional Development, San Jose, and director of Community Education at San Francisco State its office

Gordon Ruehl, AIA, Spokane, and **Norman G. Ahele,** Seattle, have been named to a Superintendent of Public Instruction special committee which will explore alternatives for dealing with school vandalism.

L. Jane Hastings, AIA, Seattle, has been named a juror for The American Institute of Architects national honor awards program.

Don Boro, University Mechanical, Inc., Seattle, has been appointed by Governor Dixy Lee Ray to a three-year term on the Governor's Advisory Board of Plumbers.

James E. Greenfield, executive vice president in charge of construction for Roberts Construction Co., Inc., Marysville, has been elected to a three-year term as director of the American Land Development Association.

Al Chochon, Seattle, has been elected president of the structural products division of Interpace Corporation.

Edward M. Burke, AIA, Seattle, has been re-elected president of the Puget Sound Health Systems Agency.

Richard Carothers Associates, P.S., Seattle, planning, landscape architect and urban design firm, has opened an office at 408 S.W. 2nd Ave., Portland. Carothers has offices in Seattle, Boise and Reston, Virginia.

Kenichi Nakano, landscape architect with the firm of Richard Haag & Associates, is one of three new members appointed by Mayor Charles Royer to the Seattle Landmarks Preservation Board. Other appointees are **William Jennings,** president of Seafirst Mortgage Corp., and **William Krippaehne, Jr.,** vice president and general manager of the Gilley Company.

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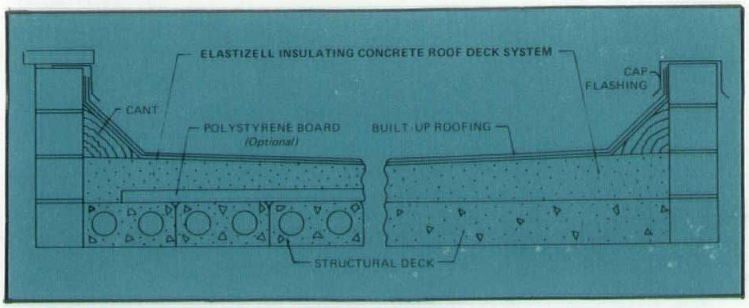
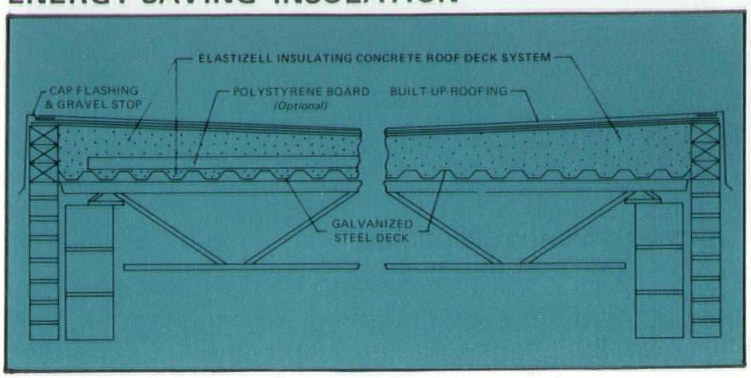
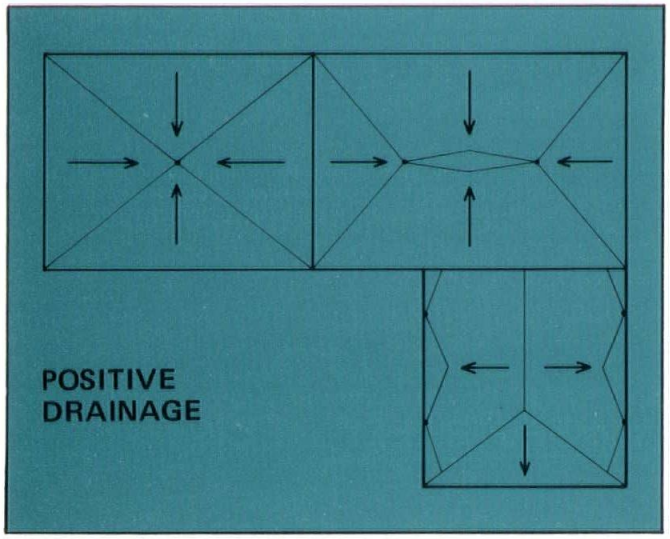


ENERGY SAVING INSULATION





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Reference: 1980 RDS

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P902, P905, P910, P913, P916
ICBO Report No. 1381 & 3081
California State Fire Marshall
Listing 1060-510:2
City & County of San Francisco—
General Approval 121E2.4
City of Los Angeles
Research Report No. 23982
Federal Construction Guide Specification
Section 03501—May, 1975
Insulating Concrete Roof Decks
Army Corps of Engineers—October, 1967
CE 219.05 (Roof Decks)
Army Corps of Engineers—September, 1970
CE 204—Class F (Concrete)
Dade County (Florida)
No. 75-239.30

ELASTIZELL CORPORATION OF AMERICA markets ELASTIZELL foam concentrate through its national applicator network. These applicators bid and install ELASTIZELL concrete for floor fills, roof decks, and various low density fill applications. They are listed on the back of this brochure.

ELASTIZELL LIGHTWEIGHT CONCRETE

ELASTIZELL is a liquid concentrate . . . a hydrolyzed protein . . . specifically formulated for the production of cellular concrete. ELASTIZELL is tenacious and withstands the rigors of mixing, placing (by pumping), and finishing such that ELASTIZELL concrete densities are closely controlled. ELASTIZELL concrete is produced by adding a predetermined volume of ELASTIZELL to a cement-water slurry. ELASTIZELL is coated with cement paste which when hardened leaved discrete air cells, a distinct advantage in maintaining insulating value in the presence of moisture.

THE "DRIER" ROOF DECK

A common misconception is that all low density insulating concretes have a high water content. ELASTIZELL concrete is not the same as the expanded aggregate concretes since it requires only about *one-fourth the mix water* of the expanded aggregate concretes. This is because ELASTIZELL concrete obtains its workability from the air cells—not excessive water. The light weight expanded aggregate concretes require great quantities of mix water which are not readily released prior to roofing or even long after the roof is in place.

ALSO Consider . . . ELASTIZELL Concrete Floor Fills

ELASTIZELL lightweight concrete floor fills (100 pcf) are readily cast over steel, wood, and concrete decks in garden and mid-rise apartments, condominiums, and office buildings. They provide *sound conditioning*, additional *fire resistance*, and a *sold base* for finish flooring. This information *is not* presented in this Roof Deck Brochure nor in Sweet's catalog. Contact the **Elastizell Corporation** or your local applicator for our Floor-Fill Brochure.

PHYSICAL PROPERTIES

	Air Dry Density (pcf)	Oven Dry Density (pcf)	Thermal Conductivity, K (BTU-in./hr.-sq. ft.-°F)	Wet Density (pcf)	28-Day Compressive Strength (f'_c, psi)
Range I	21 - 27	17 - 24	.50 - .60	28 - 36	100 - 160
Range II	27 - 32	24 - 30	.60 - .80	34 - 42	160 - 320
Range III	32 - 40	30 - 36	.80 - .90	42 - 50	320 - 500

(NOTE: Range II is the most common range for roof decks.)

TABLE OF AVERAGE THICKNESSES

The average thickness for a roof deck sloped to an inside drain: Ave. thickness = 2/3 (Hi Pt. - Lo Pt.) + Lo Pt. = (2 Hi Pt. + Lo Pt.)/3

Hi Pt to Lo Pt	Average Thickness	Hi Pt to Lo Pt	Average Thickness	Hi Pt to Lo Pt	Average Thickness	Hi Pt to Lo Pt	Average Thickness
2" to 1½"	1.83"	–	–	–	–	–	–
2½" to1½"	2.17"	2½" to 2"	2.33"	–	–	–	–
3" to 1½"	2.50"	3" to 2"	2.67"	3" to 2½"	2.83"	–	–
3½" to 1½"	2.83"	3½" to 2"	3.00"	3½" to 2½"	3.17"	3½" to 3"	3.33"
4" to 1½"	3.17"	4" to 2"	3.33"	4" to 2½"	3.50"	4" to 3"	3.67"
4½" to 1½"	3.50"	4½" to 2"	3.67"	4½" to 2½"	3.83"	4½" to 3"	4.00"
5" to 1½"	3.83"	5" to 2"	4.00"	5" to 2½"	4.17"	5" to 3"	4.33"
5½" to 1½"	4.17"	5½" to 2"	4.33"	5½" to 2½"	4.50"	5½" to 3"	4.67"
6" to 1½"	4.50"	6" to 2"	4.67"	6" to 2½"	4.83"	6" to 3"	5.00"
6½" to 1½"	4.83"	6½" to 2"	5.00"	6½" to 2½"	5.17"	6½" to 3"	5.33"
7" to 1½"	5.17"	7" to 2"	5.33'	7" to 2½"	5.50"	7" to 3"	5.67"
7½" to 1½"	5.50"	7½" to 2"	5.67"	7½" to 2½"	5.83"	7½" to 3"	6.00"
8" to 1½"	5.83"	8" to 2"	6.00"	8" to 2½"	6.17"	8" to 3"	6.33"

THERMAL INSULATION

AVERAGE R FACTORS FOR DRY DENSITIES (R = t/K)

	ELASTIZELL CONCRETE 24 pcf K=0.55				ELASTIZELL CONCRETE 27 pcf K=0.60				ELASTIZELL CONCRETE 30 pcf K=0.70				ELASTIZELL CONCRETE 32 pcf K=0.80			
Average Thickness Inches	R for ELASTI-ZELL Concrete	Dead Load psf	Total R w/1" poly R=4.17	Total R w/2" poly R=8.33	R for ELASTI-ZELL Concrete	Dead Load psf	Total R w/1" poly R=4.17	Total R w/2" poly R=8.33	R for ELASTI-ZELL Concrete	Dead Load psf	Total R w/1" poly R=4.17	Total R w/2" poly R=8.33	R for ELASTI-ZELL Concrete	Dead Load psf	Total R w/1" poly R=4.17	Total R w/2" poly R=8.33
1.00	1.82	2.0	5.99	10.15	1.67	2.2	5.84	10.00	1.43	2.5	5.60	9.76	1.25	2.7	5.42	9.58
2.00	3.64	4.0	7.81	11.97	3.33	4.5	7.50	11.66	2.86	5.0	7.03	11.19	2.50	5.3	6.67	10.83
2.50	4.55	5.0	8.72	12.88	4.17	5.6	8.34	12.50	3.57	6.2	7.74	11.90	3.13	6.7	7.30	11.46
3.00	5.45	6.0	9.62	13.78	5.00	6.8	9.17	13.33	4.29	7.5	8.46	12.62	3.75	8.0	7.92	12.08
3.33	6.05	6.7	10.22	14.38	5.55	7.5	9.72	13.88	4.76	8.3	8.93	13.09	4.16	8.9	8.33	12.49
3.50	6.36	7.0	10.53	14.69	5.83	7.9	10.00	14.16	5.00	8.8	9.17	13.33	4.38	9.3	8.55	12.71
3.67	6.67	7.3	10.84	15.00	6.12	8.3	10.29	14.45	5.24	9.2	9.41	13.57	4.59	9.8	8.76	12.92
4.00	7.27	8.0	11.44	15.60	6.67	9.0	10.84	15.00	5.71	10.0	9.88	14.04	5.00	10.7	9.17	13.33
4.33	7.87	8.7	12.04	16.20	7.22	9.7	11.39	15.55	6.19	10.8	10.36	14.52	5.41	11.6	9.58	13.74
4.50	8.18	9.0	12.35	16.51	7.50	10.1	11.67	15.83	6.43	11.2	10.60	14.76	5.63	12.0	9.80	13.96
4.67	8.49	9.3	12.66	16.82	7.78	10.5	11.95	16.11	6.67	11.7	10.84	15.00	5.84	12.5	10.01	14.17
5.00	9.09	10.0	13.26	17.42	8.33	11.2	12.50	16.66	7.14	12.5	11.31	15.47	6.25	13.3	10.42	14.58
5.50	10.00	11.0	14.17	18.33	9.17	12.4	13.34	17.50	7.86	13.8	12.03	16.19	6.88	14.7	11.05	15.21
6.00	10.91	12.0	15.08	19.24	10.00	13.5	14.17	18.33	8.57	15.0	12.74	16.90	7.50	16.0	11.67	15.83
7.00	12.73	14.0	16.90	21.06	11.67	15.8	15.84	20.00	10.00	17.5	14.17	18.32	8.75	18.7	12.92	17.08
8.00	14.55	16.0	18.72	22.88	13.33	18.0	17.50	21.66	11.43	20.0	15.60	19.76	10.00	21.3	14.17	18.33

(NOTE: Various thicknesses of polystyrene board may be used.)

R-VALUE FOR VARIOUS MATERIALS

(Whenever possible, consult specific manufacturers literature)

1/2" plywood	0.62	1" urethane–sprayed on, 3 pcf	7.14	1" vermiculite 1:4	1.15
3/4" plywood	0.93	1" fiberboard	2.78	1" vermiculite 1:6	1.54
1/2" gypsum board	0.45	3/4" plaster	0.15	air space (heat flow up-winter)	0.94
5/8" gypsum board	0.56	1" poured perlited gypsum	0.87	air space-winter-reflective surface	1.90
1/2" acoustical tile	1.25	1" 24 pcf ELASTIZELL concrete	1.82	air space (heat flow down-summer)	1.23
3/4" acoustical tile	1.89	1" 27 pcf ELASTIZELL concrete	1.67	air space-summer-reflective surface	3.74
2" polystyrene board	8.33	1" 30 pcf ELASTIZELL concrete	1.43	1" Foamglass insulation	2.63
1-1/2" polystyrene board	6.25	1" 32 pcf ELASTIZELL concrete	1.25	15/16" Fiberglas® Roof Insulation	3.70
1" polystyrene board	4.17	1" perlite board	2.78	1-5/16" Fiberglas® Roof Insulation	5.26

Sources: (ASHRAE Handbook of Fundamentals, (1972) and manufacturers' values)

OVER STEEL DECKS

SAMPLE CALCULATION:	Heat Flow Up (winter) "R"	Heat Flow Down (summer) "R"
1. Outside air film	0.17	0.25
2. Built up roof	0.33	0.33
3. ELASTIZELL CONCRETE		
4. Insulation board (optional)		
5. Galvanized steel deck	0.00	0.00
6. Air Space		
7. Ceiling		
8. Inside air film	0.61	0.93
TOTAL R =		
$U = 1/R$ =		

OVER CONCRETE DECKS

SAMPLE CALCULATION:	Heat Flow Up (winter) "R"	Heat Flow Down (summer) "R"
1. Outside air film	0.17	0.25
2. Built up roof	0.33	0.33
3. ELASTIZELL CONCRETE		
4. Insulation board (optional)		
5. Concrete deck		
6. Air Space		
7. Ceiling		
8. Inside air film	0.61	0.93
TOTAL R =		
$U = 1/R$ =		

ELASTIZELL CONCRETE OVER GALVANIZED STEEL DECKS

SPECIFY: ELASTIZELL concrete over *galvanized* steel centering, since painted metal deck is not suitable for the direct application of ELASTIZELL insulating concrete.

Because ELASTIZELL concrete has the same low water content as standard weight concrete (5 gallons per sack), ELASTIZELL concrete does *not* require the slotted metal decks that the wet aggregate (vermiculite) concretes demand.

SEISMIC DIAPHRAGM DESIGN

Excellent seismic values are available with ELASTIZELL concrete over steel deck systems.

Consult steel deck manufacturer's for span/loading tables which indicate allowable loads for different deck gauge and span conditions.

Diaphragm Shear Values (lbs./lin. ft.) for ELASTIZELL Insulating Concrete over High Tensile Corrugated Steel Deck and from 1" to 4" of Polystyrene Insulation Board

Deck Gage and (Base Metal Thickness)	Allowable Diaphragm Shear		
	Mesh	No Mesh	F
24 Gage (.024")	790	460	4.5
22 Gage (.030")	970	640	4.5
20 Gage (.036")	1,030	790	4.5

Note: Complete diaphragm shear values for ELASTIZELL concrete, over high tensile corrugated steel deck with and without mesh are available. Request Bulletin: Seismic 80.

2-Hour Fire Rating with 2¼" ELASTIZELL Concrete over Metal Deck Reinforced with Keydeck Mesh

Polystyrene Insulation Board Thickness	THERMAL INSULATION	
	R Value	U Value
1"	10.12	0.099
2"	14.28	0.070
3"	18.45	0.054
4"	22.62	0.044

(FM Listing 2C5Q5.AC)

ELASTIZELL CONCRETE OVER PRECAST OR CAST-IN-PLACE STRUCTURAL CONCRETE DECKS

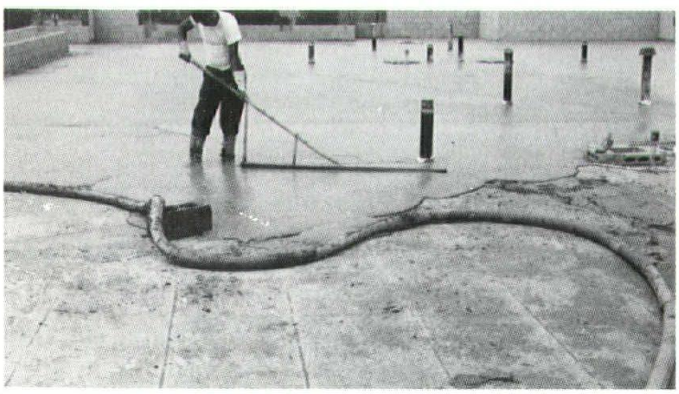
ELASTIZELL insulating concrete roof decks are a natural over precast or cast-in-place concrete—light concrete over standard weight concrete, both having the same water/cement ratio.

Perimeter venting should be considered with the cast-in-place concrete substrate. ELASTIZELL concrete has such little water that it does not require bottom side venting provisions. For any special situations, please contact either the **Elastizell Corporation** or your local applicator.

FIRE RATING: U.L. Design Numbers P905, P910, P913, P916—2 Hour

Minimum 2" ELASTIZELL insulating concrete over structural concrete with built-up roofing.

OPTIONAL: 1" to 4" Polystyrene Insulation Board may be placed between the ELASTIZELL concrete and the structural deck for increased R Values.



R-FACTORS FOR STRUCTURAL CONCRETE

	Density	Thickness	R-Factor
Cast-In-Place Concrete	145 pcf	4"	0.40
		6"	0.60
		8"	0.80
		10"	1.00
Precast Concrete Prestressed Single or Double Tees	145 pcf	2"	0.20
		3"	0.30
		4"	0.40
***Hollow Core Slabs**	**Density**	**Thickness**	**R-Factor**
Extruded-oval voids	145 pcf	6"	1.21
		8"	1.44
		10"	1.73
Extruded-rectangular voids	145 pcf	8"	1.69
		12"	1.91
Extruded-rectangular voids	110 pcf	6"	3.05
		8"	3.63
		10"	4.30
		12"	5.10
Cast-circular voids	145 pcf	8"	0.88

*PCI Design Handbook, 1971

ROOFING OVER ELASTIZELL CONCRETE

APPEARANCE: Roofing should begin when the deck can withstand foot traffic. This is usually 2 to 3 days after the concrete has been placed. The presence of hairline cracking is not detrimental to the roofing system.

DRAINAGE: The recommended slope for positive drainage is ¼" per foot. Minimum acceptable slope is ⅛" per foot.

BASE SHEET: The first ply in the built-up roofing system should be either a coated base sheet or an inorganic base ply sheet nailed to the ELASTIZELL concrete deck. Each roofing manufacturer has their own recommended base sheet product.

BASE SHEET ATTACHMENT: The base sheet should be nailed to the ELASTIZELL concrete deck. Roofing may proceed when the ELASTIZELL concrete is surface dry and the fasteners hold as required. Never solid mop the base sheet to the ELASTIZELL concrete! Acceptable mechanical fasteners (supplied by the roofer) include the following:

ES Nail-Tite® Mark III by ES Products	Standard pattern:	@ 9" spacing on lap and 2 rows in field of sheet @ 9" spacing and staggered.
Tapefast Systems by Berryfast, Inc.	Standard pattern:	one tape on lap and 3 rows of tape in field all with staples @ 9" spacing.

VENTING: Depending on the building's geographic location, design, and type of occupancy, top-side venting should be considered by perimeter venting at the flashing and/or manufactured stack vents. Consult your local applicator for his recommendations. Perimeter venting, cant strips, stack vents, etc., are provided by the roofer. Nailing is the recommended method of base sheet attachment. Special bottom-side venting provisions are not required with ELASTIZELL concrete over any substrate.

PERIMETER VENTING: Whenever possible, perimeter venting at the flashing should be designed as a part of the roof system.

STACK VENTS: If the distance to perimeter venting is greater than 50 feet and/or the ELASTIZELL insulating concrete has an average thickness greater than 5 inches, stack vents should be considered. We recommend a minimum 4" diameter stack vent for each twenty squares of roofing. Stack vents are supplied by the roofing contractor.

SINGLE PLY SYSTEMS: Single-ply roofing membranes work well with ELASTIZELL concrete roof decks. Contact the **Elastizell Corporation** for additional details.

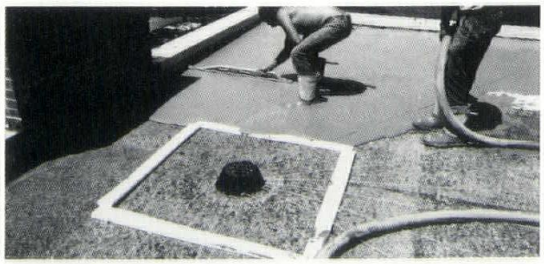
RE-ROOFING WITH ELASTIZELL CONCRETE

IMPROVE DRAINAGE & INSULATION AT A REASONABLE COST BY AVOIDING COSTLY RIP-OFF.

ELASTIZELL concrete may be applied directly over existing built-up-roofing (BUR) in re-roofing or drainage correction applications. This avoids removal of the existing built-up-roofing and the accompanying threat of damage to the building's contents.

Our recommended procedure is as follows:

1. The existing structural system should be checked for adequacy in carrying any additional loading.
2. Remove loose gravel from the deck.
3. ELASTIZELL concrete is cast directly over the prepared deck. A slurry coat to assist bonding is acceptable. Keydeck mesh should be considered at sections less than 1" thick.
4. The deck shall be vented to the original structural deck with a minimum 3" core and an acceptable manufactured roof vent. Nail the vented base sheet to the finished deck.
5. Polystyrene insulation board is often added to this system to reduce dead loads and increase insulating values. Two-density and double casting of ELASTIZELL concrete is acceptable for steep slopes or thick fills.



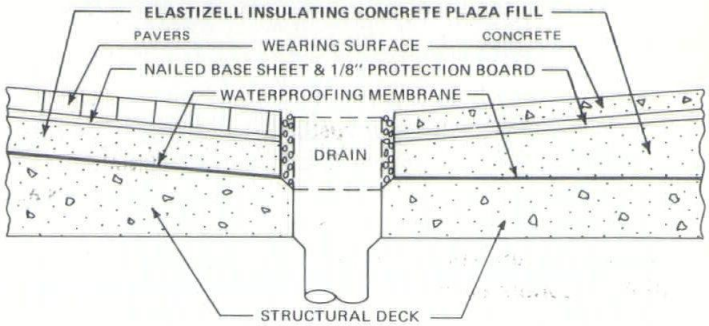
ON ALL RE-ROOFING PROJECTS, CONSULT YOUR LOCAL ELASTIZELL CONCRETE APPLICATOR PRIOR TO THE FINAL DESIGN.

EXTERIOR PLAZA APPLICATION — Recommended Method

AN EXCELLENT LIGHTWEIGHT INSULATING UNDERLAYMENT FOR EXTERIOR PLAZAS

1. Install waterproofing membrane over structural concrete which may or may not be sloped for drainage.
2. Cast sloping ELASTIZELL concrete over this waterproofed concrete.
3. Nail a coated base sheet to the ELASTIZELL concrete and mop in 1 to 3 plys of built-up roofing felts and a 1/8" protection board.
4. Install the plaza wearing surface of pavers, concrete, etc.

ADDITIONAL NOTES. Polystyrene board may be included in this system. Double casting or two-density casting is acceptable.

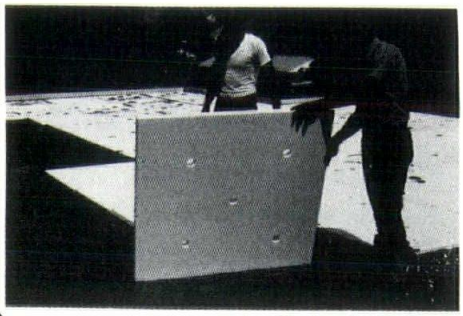


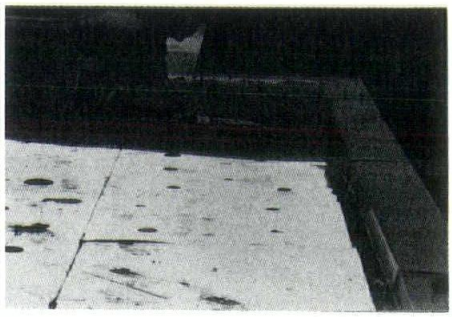
ELASTIZELL INSULATING CONCRETE AND POLYSTYRENE BOARD

The addition of self-extinguishing polystyrene insulation board to an ELASTIZELL concrete roof deck system provides these advantages when cast over wood, steel, or concrete decks.

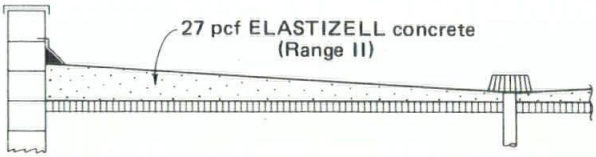
Less Dead Weight Higher Insulation Thinner Roof System Maintain Slope-to-Drain Rigid Base for BUR

Insulation board shall be formed from an expanded polystyrene bead and shall conform to Federal Specification HH-1-524b. The board shall have a minimum density of 1 pcf. We recommend 5 bond holes for each 16 square feet of board. The board shall be placed in a slurry coat of ELASTIZELL concrete and topped with a minimum 2" of ELASTIZELL concrete. The board should be held back 3" from the edge of the roof deck and 24" away from the roof drains. For special applications, please consult your local applicator.

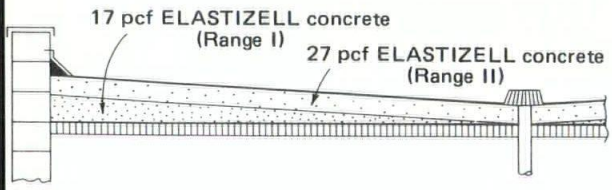




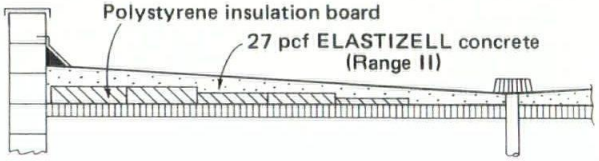
Standard system for positive drainage



Two density casting for improved R-Values



With polystyrene insulation board for higher R-Values



TWO-DENSITY CASTING

Two-density casting of ELASTIZELL insulating concrete utilizes the versatility of this material. The bottom fill (cast first) is a lighter fill for greater insulation and less dead weight. The topping fill (cast second) is a standard roof fill (minimum 2") which is lightweight, insulative, and an acceptable surface for roofing.

CONCLUSION: Two-density casting provides a better insulated roof deck at the same thickness and a lower dead load with the equivalent top surface for the roofing application. Polystyrene insulation board may be added to this roof system for even higher insulation values.

Range I: 17 pcf ELASTIZELL concrete weighs 1.42 pounds per inch per square foot.
Range II: 27 pcf ELASTIZELL concrete weighs 2.25 pounds per inch per square foot.

OVER WOOD DECKS

ELASTIZELL insulating concrete is cast over plywood roof deck systems on apartment and commercial buildings to provide positive drainage and a non-combustible roof deck. After placing a layer of asphalt impregnated building paper on the plywood deck, the ELASTIZELL concrete is cast with the desired drainage slopes. For proper slope, the ELASTIZELL concrete will often be very thick at the roof edges with a minimum 1½" thickness at the drains. Consult your local applicator for his recommendations with regard to concrete strength, density, and thickness for this application. ELASTIZELL concrete also improves roof insulation, airborne sound attenuation, and top-side fire protection. ELASTIZELL concrete is often cast over existing roof membranes as an efficient and economical method of re-roofing and providing drainage slope.

ARCHITECTURAL SPECIFICATIONS

DIVISION 3 – CONCRETE

OR

DIVISION 7 – INSULATION

LIGHTWEIGHT INSULATING CONCRETE

Part One – GENERAL

1.01 **SCOPE OF WORK:** The certified ELASTIZELL concrete applicator shall furnish labor, materials, equipment, and supervision for the installation of the ELASTIZELL concrete in accordance with the Drawings and Specifications. Other materials shall meet ELASTIZELL concrete specifications with proper documentation.

1.02 **CERTIFICATION:** The certified applicator of the Elastizell Corporation of America, will deliver to the Architect a certificate from the manufacturer and co-signed by the applicator stating that the insulating concrete was installed in accordance with specified requirements in effect at that time.

Part Two – MATERIALS

2.01 **LIGHTWEIGHT INSULATING CONCRETE**

A. ELASTIZELL CONCRETE is a slurry of Portland Cement, water, and ELASTIZELL. Use Range II ELASTIZELL concrete unless otherwise stated.

B. PORTLAND CEMENT shall conform to ASTM C150 – Type I, II, III, or Block Cement.

C. MIXING WATER shall be a maximum of 6 gallons per sack of cement. Mix water shall be potable and free of deleterious amounts of acids, alkali, salts, oils, and organic materials.

D. ADMIXTURES for water reducing and set accelerating, etc., may be used with ELASTIZELL concrete in accordance with the manufacturer's recommendations as applicable for unusual job conditions.

E. ELASTIZELL concentrate shall be supplied by the Elastizell Corporation of America and installed by a certified ELASTIZELL concrete applicator. (ELASTIZELL concentrate may be tested as described by ASTM C796-74.)

2.02 **INSULATION BOARD** shall conform to Federal Specification HH-1-524b, and shall be in thicknesses as shown on the Drawings. The board shall have a minimum density of 1 pcf and shall have a minimum of 5 bond holes for each 16 square feet of board.

2.03 **EXPANSION JOINTS** are only recommended when there are expansion joints in the structural system. Perimeter expansion joints are not necessary with ELASTIZELL concrete.

2.04 **REINFORCING MESH**, when required and indicated on the Drawings, shall be Style 2160-2-1619 Keydeck as manufactured by Keystone Steel and Wire Company or an equal sized mesh. Reinforcing mesh is not normally required unless seismic or fire ratings are required for steel deck construction.

Part Three – EXECUTION

3.01 **PREPARATION:** The deck surface shall be clear of standing water, dirt, debris, ice, and other foreign materials. Roof grades shall be determined prior to placement of the concrete.

3.02 **WEATHER:** ELASTIZELL concrete should not be placed at temperatures less than 32° F with a falling temperature prediction to avoid freezing before initial set. If this condition cannot be met, the applicator shall inform the Architect of precautions necessary for the installation of an acceptable deck. In cold weather, the built-up roofing application should be coordinated with the roof deck installation to avoid prolonged exposure of the deck.

3.03 **MIXING, PLACING, AND FINISHING:** ELASTIZELL concrete shall be batch blended in a mixer approved by the manufacturer. It shall be pumped or otherwise transported to the place of final deposition by manufacturer approved methods. Pumping heights will not adversely affect the material. Slurry coats, two-density casting, and double casting are acceptable methods of installation. The concrete shall be darbied to the proper thickness and slope with a surface suitable to receive roofing. The minimum recommended thickness is 2" for new construction.

3.04 **TESTING:** The wet density of the concrete shall be checked at the point of placement and the mix adjusted to obtain the required wet density. At least 4 test specimens shall be sampled at the point of placement for each day's pour or each 80 yards of material placed. The specimens, 3" x 6" cylinders, shall be protected from damage and temperature extremes, and shall be tested in accordance with ASTM C495 except that the samples shall not be oven-dried prior to compressive testing.

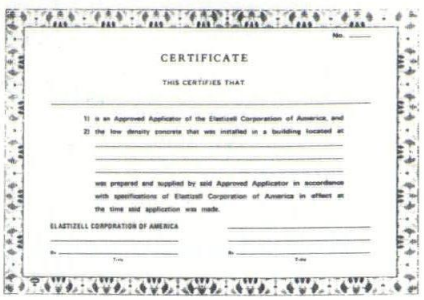
3.05 **CURING:** The applicator shall provide for curing of the deck when conditions so require. Heavy traffic shall not be permitted on the deck.

3.06 **CLEANUP:** Upon completion of the work, all traces of concrete shall be removed from surfaces on which it was not scheduled to be placed.

CONTACT YOUR NEAREST ELASTIZELL CONCRETE APPLICATOR FOR THEIR RECOMMENDATIONS AND GUIDE SPECIFICATIONS!

CERTIFICATION

A Certificate of Compliance may be issued to the ELASTIZELL concrete applicator upon completion of the roof deck. The job specimens are tested by an independent testing laboratory, and the results are submitted to the Elastizell Corporation of America for review. For a Certificate to be issued, the test results must meet or exceed job specifications and the application must be in accordance with ELASTIZELL concrete specifications and recommendations in effect at that time.



No. _____

CERTIFICATE

THIS CERTIFIES THAT

_____

1) is an Approved Applicator of the Elastizell Corporation of America, and
2) the low density concrete that was installed in a building located at

_____

was prepared and supplied by said Approved Applicator in accordance with specifications of Elastizell Corporation of America in effect at the time said application was made.

ELASTIZELL CORPORATION OF AMERICA

By _____ Title _____

By _____ Title _____

CERTIFIED ROOF DECK APPLICATORS: To correctly install an ELASTIZELL concrete roof deck, the proper mix design and the proper equipment must be used. The certified applicators listed below have the technical capability and the practical know-how for these installations. They are backed by continuing research at universities and laboratories. Their many satisfied customers are the best testimony of their competence.

EAST

GEORGIA, FLORIDA, VIRGINIA, NORTH & SOUTH CAROLINA ALABAMA, TENNESSEE
Concrete Specialties of America, Co.
P.O. Box 28732
Atlanta, GA 30328
AC 404 / 432-5577

NEW ENGLAND

Frank J. Franzone, Inc.
12 Myles Standish Drive
Bradford, MA 01830
AC 617 / 374-6434

MIDEAST

OHIO, KENTUCKY, WEST VIRGINIA
Elastizell Lightweight Concrete of Ohio, Inc.
1903 Springboro Pike
Dayton, OH 45439
AC 513 / 298-1313

INDIANA, KENTUCKY, OHIO
Place-Crete, Inc. (Main Office)
P.O. Box 306
Dayton, OH 45449
AC 513 / 298-2121

WISCONSIN, ILLINOIS (NORTH)
Elastizell of Wisconsin, Inc.
W229 N2496 Hwy 164
Waukesha, WI 53186
AC 414 / 547-5565

MICHIGAN, OHIO (NORTH)
Lightcrete, Inc.
P.O. Box 337
Whitmore Lake, MI 48189
AC 313 / 449-2830

ILLINOIS (NORTH)
Concrete Specialties of Tulsa, Inc.
800 East Northwest Hwy, Suite 330
Palatine, IL 60067
AC 312 / 359-1660

MIDWEST

OKLAHOMA, KANSAS, ARKANSAS, TEXAS, MISSOURI (WEST)
Concrete Specialties of Tulsa, Inc.
P.O. Drawer 15738
Tulsa, OK 74112
AC 918 / 838-3365

NEBRASKA, SOUTH DAKOTA, IOWA
Concrete Specialties of America, Inc.
1019 North 90th St. – Apt. 4
Omaha, NE 68114
AC 402 / 393-0595

LOUISIANA, MISSISSIPPI
Concrete Specialties of America, Inc.
2433 Connecticut
Kenner, LA 70062
AC 504 / 467-1116

MISSOURI (EAST), ILLINOIS (SOUTH)
Elastizell of St. Louis, Inc.
820 St. Louis Avenue
Valley Park, MO 63088
AC 314 / 225-4311

WEST

CALIFORNIA, NEVADA, ARIZONA
Cell-Crete Corporation—South
2524 N. San Gabriel Blvd.
Rosemead, CA 91770
AC 213 / 283-9201

Cell-Crete Corporation—North
130 Sunset Blvd.
Hayward, CA 94541
AC 415 / 357-0350

WASHINGTON, OREGON
Janes Bros., Inc.
11636 S.E. 5th, Suite B
Bellvue, WA 98005
AC 206 / 455-1447

Call Sweet's BUYLINE for your nearest applicator

Elastizell Corporation of America

P.O. Box 1462 Ann Arbor, Michigan 48106 AC 313 / 761-6900

The information presented in this brochure is based on the best of our knowledge and believed to be correct. Please read the information tempered by these recommendations and assumptions. Follow local applicator recommendations, regarding geographic conditions and operating procedures.

ALSO . . . *Distributors of NATIONAL-CRETE Liquid and Equipment Manufactured by National Foam System, Inc.*

News

Central Washington "Celebration 79" Exposition of Architecture and Art

"Celebration 79", a mini-exposition of Architecture and the Arts, was presented November 15 through December 17 by the Central Washington Chapter, American Institute of Architects, Columbia Basin College and the regional Arts Councils of the Tri-Cities, Walla Walla and Yakima.

The regional expression of The American Institute of Architects' 1979 Celebration of Architecture was designed to expand the awareness, understanding and emotional involvement of people in their man-made environment. It was held at the Performing Arts Complex at Columbia Basin College, Pasco. Central to the Celebration was the exploration of the concept of architecture as an "Art". Multi-media presentations, from historical aspects through projected future directions by prominent and distinguished scholars, practitioners and artists of regional and national stature, highlighted "Celebration 79".

Area architects, Columbia Basin College, University of Washington, Washington State University and University of Idaho Art and Architecture students and regional artists presented formal exhibits of architectural drawings, models and photographs, art and architecture film screenings, multi-media presentations, informational services displays and special forums on art in public places.

News

Western Washington Solar Energy Association

Monthly meetings of the Western Washington Solar Energy Association are held the second Wednesday at 7 p.m. in the Blue Flame Room, Washington Natural Gas, 815 Mercer St., Seattle. Further information is available from Perry Lovelace, 325-6710 or 783-6283.

Seattle's International Fountain Gets a Facelift

Seattle's International Fountain at Seattle Center served as a central publicity theme for Seattle's World Fair in 1962. With its music system, water jets and lighting system, the fountain has provided continuous performances for visitors over 17 years.

Architect John Phillips and mechanical-electrical engineers Valentine, Fisher & Tomlinson took the award-winning design by two Japanese architects and made it functional. The engineers were involved in revitalizing the fountain which has working parts concealed 20-ft. beneath the dome. A 350 hp. electric motor driving a 6400 gpm pump through an electric clutch and a multitude of electric controls and valves operated the fountain. A perforated tape mechanism in a remote control room originally operated the nozzles in preprogrammed patterns to create the water displays. This mechanism was the source of malfunction and has now been computerized.

Industry Professionals in Public Service: The School Facilities Cost Advisory Board

Can school construction, maintenance and operating costs be

stabilized? Is there some way that school design and construction time can be reduced? Can we produce quality school facilities that are capable of being readily and economically adapted to changing school and community needs?

Finding the answers to these challenging questions are the goals of the Washington School Facilities Cost Stabilization Program, its Technical Director Harvey Childs, Architect, and a 23 man Advisory Board appointed by Superintendent of Public Instruction Dr. Frank Brouillet.

Additional information on the Washington School Facilities Cost Stabilization Program and the work of the Advisory Board is available from Harvey Childs, AIA, with the office of the Superintendent of Public Instruction, Old Capital Building, Olympia, 98504.

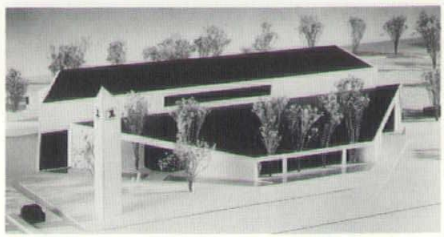
Canadian Building Materials Show Set for Seattle, Feb. 5-6

A major exhibition featuring Canadian building products and construction systems is expected to draw more than 1,000 visitors to the Canadian Building Materials & Hardware Trade Show scheduled at the Seattle Center Flag Plaza Pavilion, Feb. 5-6, noon to 8 p.m.

According to Al Shott, show manager with the Canadian Consulate General here, the event will include exhibitors from all Provinces across Canada. It is intended as a showcase for Canadian manufacturers and agents to benefit anyone involved in commercial, industrial, and residential construction.

"This is a major expansion over last year's highly successful show. It represents more Canadian building materials and technologies than has ever before assembled in Seattle."

Richland Bank Credits



The Richland Branch of the Seattle First-National Bank (*Northwest Architecture,* September/October 1979) was designed by Will Quam, AIA with The Austin Associates. Credits were incorrectly given in the feature article.

Letters

To the Editor:

We are pleased to enclose our contribution to further publication of *Northwest Architecture*. The format and layout are excellent.

Please continue your superb publication.

Very truly yours,
Martin McDougall, President
McDougall Control Company

To the Editor:

I just read the September-October 1979 issue of *Northwest Architecture*. After having been involved in the embryonic stage of the magazine, I was very excited at the direction the issues have gone, especially this issue which addresses the all important item of energy. Considering that this was not conceived to be just a magazine for architects to read about other architects, and considering the target market of the magazine, I think it is very appropriate in showing the building industry what architects are doing concerning energy. The article with the Governor was fantastic.

Keep up the good work.

Sincerely yours,
Dale S. Brookie, AIA

Classified

Classified ads are accepted in the established style of this publication. The rate is 60¢ per word with a $3.00 minimum. Telephone number is one word, street address and city are two words. Payment must accompany copy. Please send to: Grawin Publications, 1020 Lloyd Building, Seattle, WA 98101.

MOSAIC ARTIST, designer, craftsman, specializing in traditional mosaic techniques. Robert L. Jarvis, 1737 N.E. 89th St., Seattle, WA 98115; (206) 524-3289.

ARCHITECT or Architectural Draftsperson desired for established southeastern Washington firm; one year minimum experience necessary; responsibilities and remuneration commensurate with ability. Contact: The Pence Associates, Inc., P.O. Box 2368, 1313 W. Clark St., Pasco, WA 99302, (509) 547-5024.

DESIGN CONSULTANT applications are now being accepted by the Washington State Jail Commission. The Washington State Jail Commission is interviewing applicants for a one-year consultant contract to advise the Commission on all aspects of local jail design review and cost analysis. Minimum requirements include current license, substantial experience in correctional facility design, and willingness to travel extensively throughout the State. Terms and conditions negotiable. For further information, please contact:

George Edensword-Breck, Director
Washington State Jail Commission
110 East Fifth St., Room 223
Olympia, Washington 98504
(206) 753-5790

Puget Power has two important conservation resources for you and for your clients:

information and money.

We all know that information and money are necessary for effective energy conservation. That's why Puget Power has programs to provide both free.

Computer analysis.

We've developed a series of computer programs to help you analyze your new building designs for energy efficiency. We can give you information such as electric heating and cooling load calculations, energy consumption projections based on localized weather data, and an economic life-cycle cost analysis.

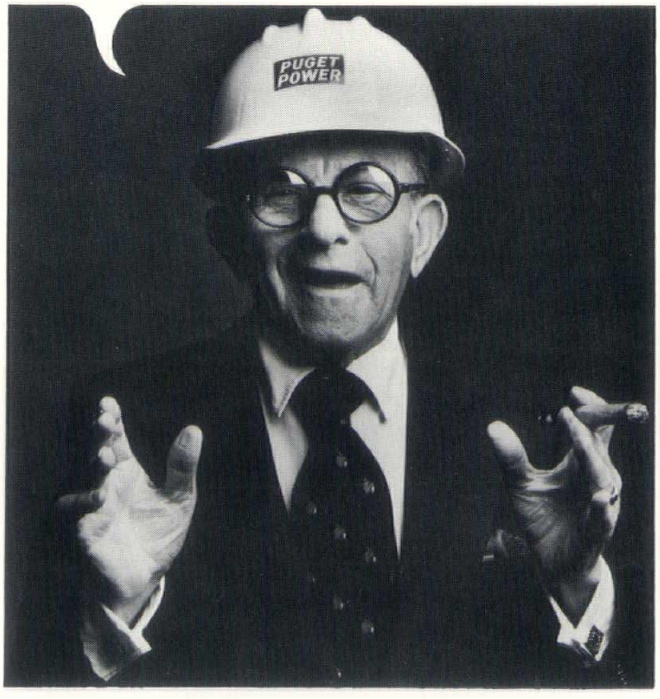
No-interest loans.

Puget Power also has a program of no-interest loans for energy saving modifications to existing buildings. We'll do an energy analysis of an existing structure and provide no-interest loans for improvements that are cost effective.

Our no-interest loans are available to Puget Sound Power & Light Company customers with electric heat installed prior to August 7, 1978.

If you or your clients are interested in more information about Puget Power's free energy conservation programs, please give us a call. We want to help.

"Call 454-6363, and ask for General Marketing Technical Services. And tell them George sent you."



"We've still got it. Let's conserve it."

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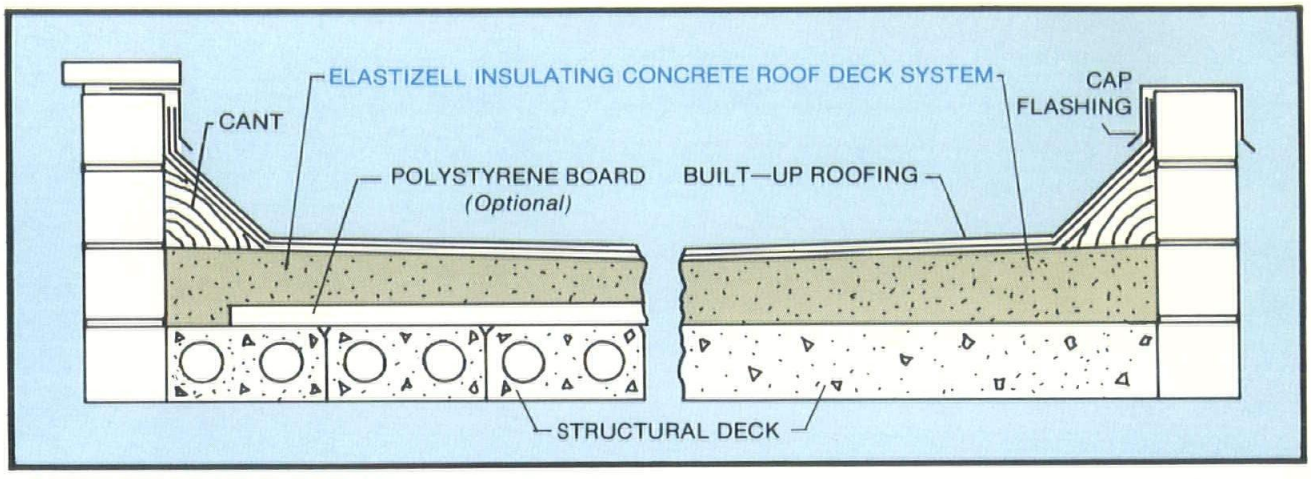
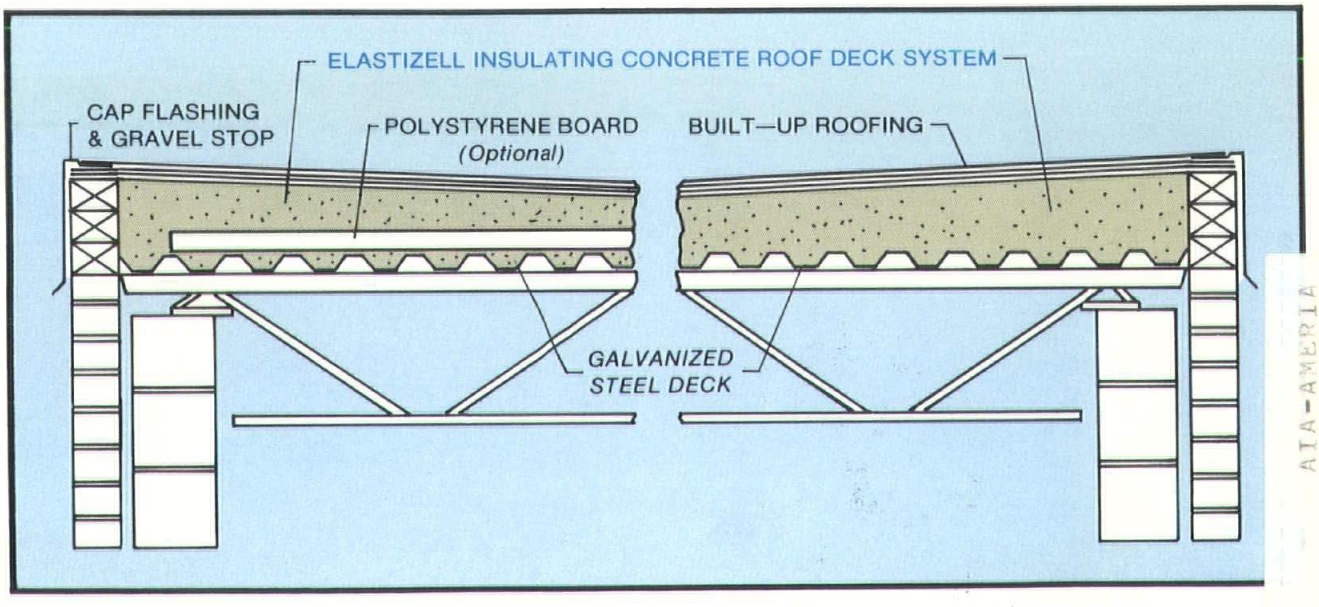
Elastizell

JANES BROS.
(206) 455-1447
11636 S.E. 5th Suite B
Bellevue, WA 98005

LIGHTWEIGHT INSULATING CONCRETE ROOF DECK SYSTEM





ADVANTAGES OF ELASTIZELL CONCRETE AS A ROOF DECK MATERIAL

- **Positive Slope-to-Drain**
- **Rigid, Tapered Thermal Insulation**
- **Cast-in-Place, Nailable Roof Deck**
- **Improved Fire Resistance**
- **Competitive — First Cost & Life Cost**

ELASTIZELL CONCRETE IS 100% PORTLAND CEMENT AND CONTAINS NO EXPANDED FILLERS

Pull ELASTIZELL insert from between pages 15 and 22 for your files