



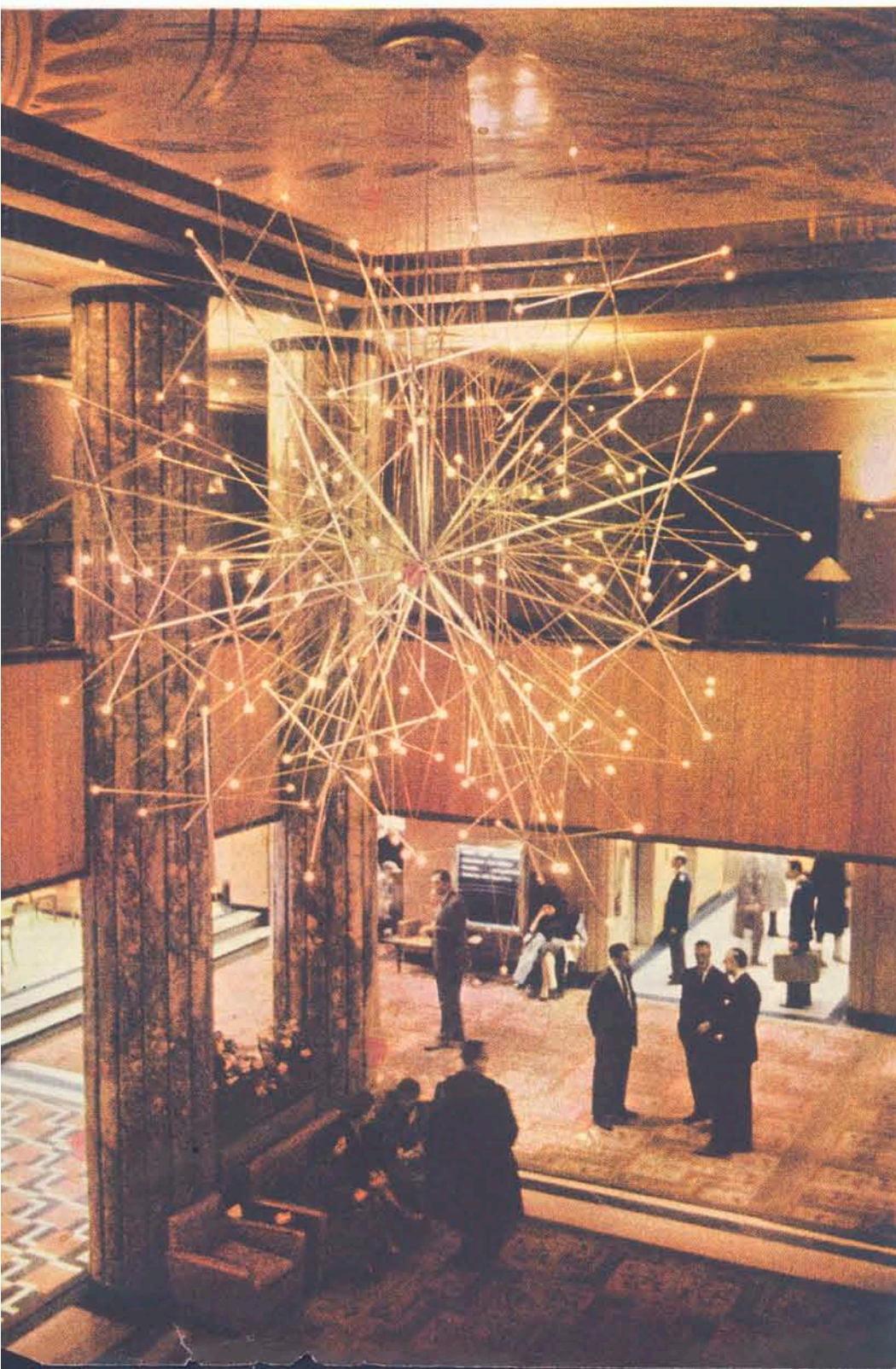
In his New York apartment, Richard Kelly tests the intensity of lamps that "wash" the walls with light.

# Mr. Kelly's Magic Lights

This expert contends that tricks of illumination can refresh a tired man and make a faded woman beautiful. Here's how he lights homes and offices with startling and dramatic effect.

By ARNOLD NICHOLSON

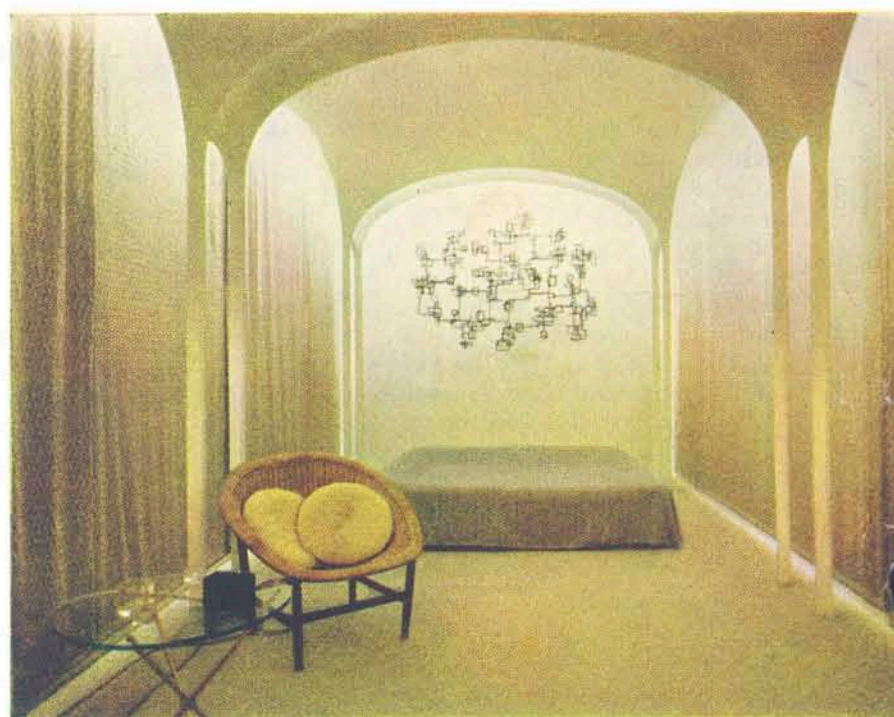
Below: Kelly designed this wireless chandelier—14 feet across—in Manhattan's Barbizon Plaza Hotel. It has 192 pea-sized bulbs and the current for them flows through the rods.



There is a prominent hostess in New York—and for obvious reasons she shall remain nameless—who has found a perfect way to move her guests from the table when her party is threatened by a conversational bore or bores. She uses light.

Her weapon is a tiny switch under the table which controls the level of illumination in her dining room through an automatic system. During the meal, and for as long after as everyone is at ease, the light in the background, away from the table, is dim. A flick of the concealed switch actuates a relay, and the level of light in the room slowly, almost imperceptibly builds up until her guests—even the most ardent conversationalists—decide that the surroundings are getting bleak, the hour must be late, and all but ask her to dismiss them from the table.

The man who installed the lighting system which works this magic is an intense, imaginative individual who is best described as the leading advocate of the new age of light. His name is Richard Kelly, and he calls himself a consultant in architectural-light design. Kelly didn't anticipate that his client's dining-room lights would have this particular use. "She

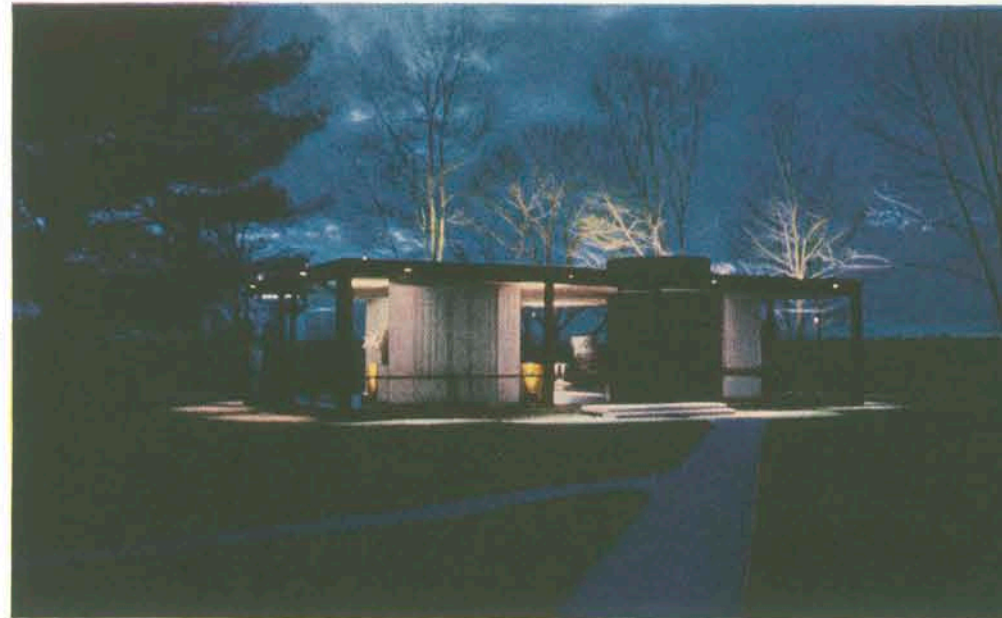


An arched plaster canopy conceals the light source in this windowless bedroom in the Connecticut guest house of a Kelly client, architect Phil Johnson.





The lights which Kelly (left) installed above the windows in the library of his Fifth Avenue residence can be varied to approximate different sunlight intensities.



Kelly licked the glare problem in this glass-walled house near New Canaan by lighting it from the outside. Electricity, for weekends only, costs \$100 a month.

discovered it by experiment," he told me, "and I've passed the word along to other clients since. It's certainly a logical effect."

Most of us, in his opinion, don't realize the control that light exerts on our lives. "The look of things," he believes, "determines more of how we feel and know them than the things themselves." He supports this statement with the psychological research of the American Foundation for the Blind, which has established that "those of us who see gain 87 per cent of our perception through sight."

We're beginning to get the idea, however. In the past four or five years, as much as a fifth of the cost of some buildings has gone into the light budget. Outdoor illumination for General Motors' huge technical center, near Detroit, where Kelly worked with architect Eero Saarinen, required more than \$1,000,000 in equipment. The lighting of one New York apartment, for art connoisseur William A. M. Burden, cost \$35,000. Such expenditures, guided by Kelly or by other lighting consultants, are "reinforcing" architectural design with illumination, as architect Philip Johnson expresses it.

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Below: In the new International Arrivals lobby at Idlewild Airport, Kelly "painted" the ceiling with light that is geared to daylight and dark by a special "astronomical" clock.



Kelly's "dark lights" from above illuminate the entrance to New York's Seagram Building at night. The lighting reaches its peak intensity at noontime.





## Mr. Kelly's Magic Lights (Continued from Page 29)

Johnson, one of the most venturesome of contemporary architects, is a friend of Kelly and has worked with him on numerous occasions. Their most recent collaboration was in the design of the new Seagram office building, at 375 Park Avenue, in New York, where Johnson was associate to senior architect Mies van der Rohe. This bronze-and-glass giant, thirty-eight stories high, is alive with Kelly-engineered light, both day and night, and is one of the big city's most discussed after-dark spectacles.

The light that floods the immense glassed-in lobby of the Seagram Building varies in brightness according to the hour of the day. There are very practical reasons for this, based on the intensity of light outdoors and on the numbers of people using the building. The light in the offices above, however, holds a constant level during the working day. "Changing intensity is hardly advisable where you have a variety of renters of office space," Kelly says. "It might have unforeseen effects. I know one big office where the lights are given added intensity about three quarters of an hour before lunch. The management figures this helps compensate for that before-lunch letdown."

Efforts to capture mood by controlling the level of light are most apparent, and sometimes a nuisance, in restaurants and cafés. "I stumble around like everyone else if I step from a bright street into an almost cave-dark night club or bar," Kelly admits. "If it's properly planned, there's a foyer where your eyes can get adjusted to the dark. And there's a very good reason for the dim light—it conveys a sense of intimacy, making each table a little world to itself; and it gives the management a chance to highlight points of interest, like a stage or a painting, but most often a bar."

Dimmers are constantly adjusted in restaurants. A smart maitre d'hôtel not only edges the light up when the room is crowded; he holds it at a "busy" high level during the lunch hour, drops it way down at cocktail time, and up a degree when dinner crowds arrive. Kelly considers the installation of modern dimming equipment, which means a voltage regulator, an almost essential part of any lighting system, "especially in rooms where the numbers of people vary."

"People soak up light. A good hostess realizes this, and increases the light when the crowd grows large. We're accustomed to switching on extra lamps, simply because we have had no other way to do the job. Now, however, a voltage-regulator dial in place of the usual off-or-on switch will make the change gradually and smoothly. Furthermore, when the voltage is low and the lamps are dimmed, their life is prolonged and the current costs are less."

The limited and often fumbling use of dimming equipment, lenses, filters and the avalanche of new types and shapes of lamps that began to be available almost a generation ago spurred Kelly into his present career. He was one of New York's thoroughly frustrated young pioneers early in his career. He had come east from Zanesville, Ohio, in 1928, to work his way through Columbia University, and a part-time job with a lamp manufacturer led him to stake out a career in the lighting field when he graduated. By the time of World War II he had concluded that artificial illumination was lagging years behind its capabilities and seethed with impatience at his inability to push it along.

"I watched the architects putting more and more glass in private homes and big

buildings," he recalls, "and dreamed all sorts of schemes to supplement their growing use of natural light with the man-made variety. There was so much that was overdue."

Kelly's vivid imagination is almost invariably stirred by the development of new lighting equipment. In the late '30's, when he heard about a man who had silvered the inside of a light bulb, for instance, he tracked him down. It was the late Clarence Birdseye, of quick-freezing fame, who was developing what became the sealed-beam lamp.

"I stuck some of his silvered lamps in cans and hung them from the ceiling in a store display window, and then up in the plaster itself. They were, as far as I know, the first concealed, high-intensity downlights designed for everyday use," Kelly says. "But this was piddling. I had to hold my experiments to little decorating jobs. Inventions like Birdseye's deserved much greater use."

"When I landed a sizable contract and suggested such things as the use of reflected light instead of glaring overhead fixtures, or varying light intensity according to the hour of the day I got nowhere. The really ambitious ideas seemed to founder in architects' offices. They were impractical, I was told, 'for architectural reasons.'"

So Kelly, ten years after he had graduated from college, went back to school and became an architect. He spent two years at Yale University during the war. "They had pinned a Four-F label on me, due to the aftermath of an abdominal operation. There wasn't any lighting business then," he said. "I figured it was a good time to investigate those architectural reasons."

His life as a consultant still has its share of frustrations, which chain-smoking, urbane Kelly never quite succeeds in masking. But he is equipped, when "architectural reasons" are mentioned, to ask "What reasons?" and to advance his own ideas in discussing them. He remains a pioneer in being both architect and lighting expert—his principal competitors have stage-lighting backgrounds—and his combined talents in the past few years have influenced the appearance of many homes, offices, museums—in fact, any type of structure. He has touched them all, even launching a major light change in gambling halls.

Kelly's work in the Seagram Building is a striking example of the consultant's role. The lobby, a lofty, glassed-in area, invites you to enter on what appears to be a sunlit floor and is dominated by the glow of chalk-white marble elevator shafts, washed in light. The luminous white marble is Kelly's suggestion. Mies van der

Rohe had originally specified a dark green stone. The illumination has its source in fixtures artfully concealed in the ceiling, twenty-four feet above the floor and, Kelly believes, is probably the most intense concentration of wattage per square foot of any public building anywhere. It is not constant, but automatically varies according to the time of day, reaching a peak of brightness during the noon hour, when the light outdoors is high and the lobby filled with people.

The glass-walled outer offices on the floors above are lit by luminous ceilings bright enough to counter and soften the glare of the sky through the gray-tinted glass. Office workers seldom find it necessary to lower blinds. The intense white ceiling light glows gold through the tinted glass when viewed from the street. This decorative illumination, as well as the light in the lobby below, is maintained until midnight each evening.

"The night lighting of the building," Kelly explains, "is a purely promotional use. We installed a completely separate system of low-intensity fluorescent tubes in the ceilings to provide it, simply because it was cheaper to do it that way instead of trying to switch on only part of the high-intensity daytime lights."

The Seagram combination of tinted glass and even, overhead artificial illumination to eliminate daytime glare is a foretaste of what's in store for many offices and homes in the future. One of Kelly's principles is that you need more artificial light during the day, around big areas open to the sky, than at night. Some of his earliest work in homes was the adoption of spotlighting fixtures to beam light on the inside of thinly curtained windows, and on the wall surfaces adjacent to them, "so you don't have to squint and refocus your eyes every time you look in that direction. It's an old idea. Railway and vehicular tunnels, for instance, use bright artificial light on the walls to condition eyes to approaching daylight. It works even better in the home."

Glare, incidentally, is the bane of Kelly's professional life, a condition to be avoided except for those rare occasions when a client wants to stop people cold in their tracks. "Like the hard-sell glare of a radio commercial," he says.

"Sensitive people bitterly complain about the lighting in the average home," Kelly told me. "They say there's either too much or not enough. Glare is almost always the culprit, not the intensity of light. It was glare that led to my close association with Phil Johnson."

The glare was Johnson's problem in his fabulous Glass House, a dwelling that compounds the lighting dilemma that faces every owner of a picture window or glass wall. His bachelor's quarters, hidden away on a wooded hillside near New

Canaan, Connecticut, is one immense rectangular room under a flat roof with floor-to-ceiling glass on all four sides.

The architect, sensing the magnitude of his problem at the time he was planning the house, discussed it with Kelly. They had met shortly after the war at New York's Museum of Modern Art, where Johnson was then still director of the department of architecture he had founded in the '30's.

"I explained that my plan was first of all a shelter," Johnson told me, "which is the goal of every home. But having used transparent walls to enclose myself within a decorative landscape, instead of hiding behind conventional walls, I wanted to enjoy that environment at night. I didn't want to clutter the place with drapes and shut myself in. Neither did I want to live in a goldfish bowl."

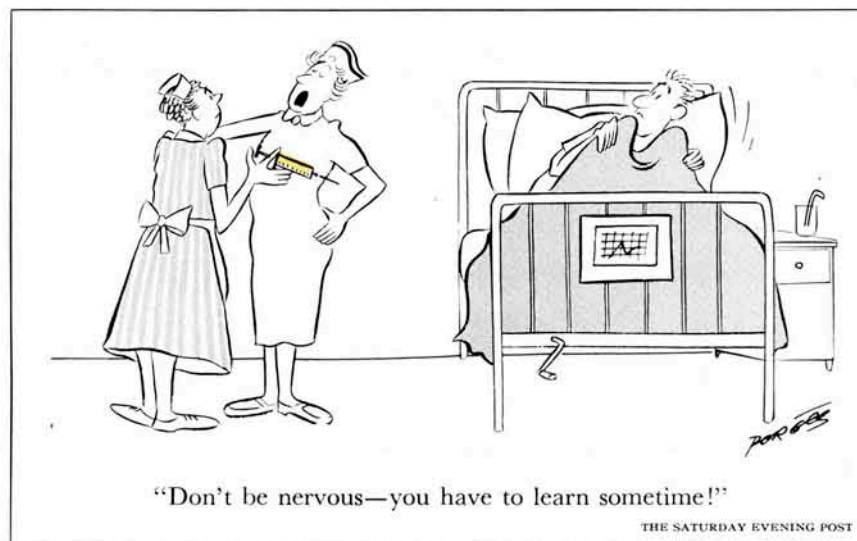
Kelly says he had "positive feelings" about lighting the house from the outside in, which was both novel and costly. Johnson backed away from the consultant's far-reaching proposals which, in view of his experiences with other architects, was hardly a surprise to Kelly. The surprise came later. The lighting expert and the architect were thrown together, remodeling a New York town house for John D. Rockefeller, III, which the Rockefellers used for their guests and later gave to the Museum of Modern Art. "Johnson seemed pleased with our work together there," Kelly said, "and got around to discussing the Glass House again. He was fed up with trying to get by with makeshift light indoors. It glared at him from the blacked-out glass, even when he cut it down to six wax tapers in a candelabrum. He suggested I tackle the job."

I had a look at Kelly's lighting of the Johnson house one evening last winter. He has replaced the annoying six candle-power of the candelabrum with a pleasing and fantastic total of 8,000,000 candle-power. It costs Johnson \$100 a month to light the place, though he is in residence only weekends. The reason for this outsize electric bill is obvious when you approach the property at night, and great sweeps of light become visible over acres of landscape. The house is a gleaming rectangle at the heart of this outdoor illumination, with the interior obscured by reflections from its glass walls. Yet I felt shielded and secure once I had stepped through the doorway and entered Johnson's home.

The secret is artificial illumination that copies daylight—most of the interior light is reflected from the outdoors. The fascia board at the edge of the roof is equipped with spotlights that shower their beams down to the ground immediately around the house, which then reflects a soft glow indoors. This overhead light also strikes and reflects from the outside of the glass walls, which helps conceal the interior from the view of anyone outdoors. There are no reflections from the glass, only soft illumination from the bright surroundings when you are indoors. One gets the impression of being centered, almost floating, on a sea of light.

The final touch "papers the walls," as Johnson wished, with the landscape. The batteries of spotlights on the roof and in ground stations cannot be seen when you are indoors, but their beams etch patches of the hillside and giant trees with light against the background of black night. The only interior lights are urns which project pencil beams to the ceiling near the glass walls, a down-shaded reading lamp in the living area and another at the head of Johnson's bed. The bath, hidden in a central, circular brick core which also contains the fireplace, heating and cooling

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"Don't be nervous—you have to learn sometime!"

THE SATURDAY EVENING POST



(Continued from Page 61) equipment, has its own bright, dressing-table lights.

"Any home where floor-to-ceiling glass is used to connect space indoors with that on the outside can use the Glass House principles," Kelly remarked. "It's ridiculous to put in a glass wall and then cover it up as soon as it's dusk. First, you have to make the night brighter outside than in; and since you can't light up the whole outdoors, you illuminate the area most important in our seeing habits. That means the ground immediately outside, as we look down more than we look up. This carries the eye along the plane of the floor right through the glass and, having done that, you light a significant object—perhaps a tree or a shrub—to complete the picture."

Johnson's guest house nearby is the complete switch in architecture. It, too, is a rectangle, but the walls are solid brick, broken only by a doorway and three port-hole windows along one wall. Here Kelly and the architect have experimented with the reverse of the Glass House problem. If architectural design to make use of artificial light will enclose and make secure a dwelling with transparent walls, they reasoned, there should be ways to open up and expand restricted, enclosed space.

They walked into a solution just across the road in New Canaan, where a house Johnson designed for electronics expert Richard Hodgson was under construction. The roof was in place, but not the side walls, and the contractor had ringed the place with temporary walls to protect the job and his workmen.

"The temporary walls were a little higher than the roof, and a foot or so out from the eaves," Kelly explains. "When Phil and I stepped inside, the effect was magic. Light from the sky, which was invisible to us, reflected from the temporary walls and gave the feeling of great space. We decided this was it."

They tested the idea in the small, completely enclosed bedroom in the guest house. Johnson designed a graceful, arched plaster canopy, or false ceiling, which rests on pillars a foot or so out from the wall. The light fixtures are hidden in the space above this canopy and below the real ceiling and beamed to illuminate the walls, just as daylight washed the temporary walls of the Hodgson house.

When we stepped from the night into the bright hallway of Johnson's guest house, and before he opened the door to the bedroom, Kelly removed his shoes and suggested that I do likewise. He offered no explanation, and I assumed we were protecting the deep-pile, wall-to-wall white rug in the bedroom. The room was about ten feet wide, and perhaps twice as long, and three walls were shrouded with white-and-gold cotton-damask print drapes. The fourth wall, at the head of the bed, was decorated with a fused gold-and-silver abstraction by sculptor Ibram Lassaw.

We sat under the domed false ceiling in these exotic surroundings, bathed in reflected light which slowly began to fade as Kelly fiddled with a control switch on a long extension cord. When, after a minute or two, it had dropped to a level at which it would have been difficult to read, the room seemed to have expanded to twice its size. There was no feeling of confinement at any level of light.

Kelly grinned as we left the room and voiced what was in my mind. "It's hardly what I'd recommend for the average home," he said. "It takes 4000 watts to light those walls at peak intensity. The cost is high, but we did establish a useful principle." Johnson later used it in the Kneses Tifereth Israel Temple, at Port Chester, New York, where daylight from continuous glass along the edge of the

roof washes down across the inner walls of the synagogue. The only windows in these walls are narrow slots filled with colored glass, which glow like jewels in the long expanse of masonry.

"I asked you to take off your shoes," Kelly said, as we left the guest house, "not only to protect the rug but to keep you busy long enough for your eyes to adjust from the night outside to the light indoors. We see amazingly well in all degrees of light. But the pupils, which widen or contract according to the amount of available light, are slow to react."

This accounts for his insistence on dimmers instead of the conventional off-or-on switch. Kelly is pleased to see voltage regulators becoming widely available today, varying in size from table models which will handle only one lamp to elaborate, automatically timed mechanisms controlling thousands of watts. "We vary the volume of sound from a radio to suit the occasion," he says, "so why not do the same with light?"

One recent development that disturbs him is the rush to buy colored light bulbs. "I use tinted light all the time," he told me. "Warm tones in the yellow, red spectrum for downlighting; and cool tones, which derive from the blue, for background illumination. I'm all for tinted light, but I fear that the rainbow assortment offered housewives in supermarkets today may produce such fantastic results that the public will turn away from color."

Kelly's lighting arrangement in the dining room of the William Burden apartment on Fifth Avenue in New York offers a stunning example of the different kinds of "light play" he recommends for any home. The three kinds of light in his catalogue are focal glow, ambient lumines-

cence—which is his term for reflected light—and play of brilliants. Focal glow is the pool of warm light under a reading lamp, while ambient luminescence would be the light from the ceiling above an ordinary bridge lamp. A chandelier, or candlelight, creates play of brilliants.

All are combined in the Burden dining room in three sets of fixtures. There are tiny reflectors which light the entire ceiling with ambient luminescence; a concealed strip of lights around the perimeter of the ceiling which "washes" the walls with reflected light; and tiny pinhole downlights above the table to create focal glow as well as play of brilliants from a decorative centerpiece.

All three circuits can be dimmed independently, and Kelly's manipulation of the lights provided a graphic demonstration of what light can do to environment indoors. The most striking contrast occurred with no change of the level of light in the room. The difference was its source. Light reflected only from the ceiling was strangely bleak compared with the same amount when reflected from the walls.

"This is the next big step in home illumination," Kelly said. "People become more important in a room where light reflects from the walls. They are comfortable. Throwing light on the ceiling was better than using glaring, naked lamps, but wall light is the pleasantest of all. It's also what you need to show off paintings or draperies."

It costs money, however, to install the gadgets that will "wash" a wall with light which maintains the same intensity from ceiling to floor—about fifteen dollars a linear foot in a room of average height. Special lenses or reflectors are necessary to build up the amounts that have to

travel the longest distance. Kelly and his associates became involved in endless mathematical calculations to engineer his biggest wall-washing project—the illumination of the new International Arrivals lobby at Idlewild Airport.

The bright, skylike enclosure which welcomes travelers to America is roofed by a huge parabolic arch, 180 feet across at the bottom and nearly half again as high at its apex. Kelly has "painted" the underside of the arch with reflected light which, as in the Seagram Building, is controlled by an astronomical clock. It is brightest when daylight pours in through the glassed-in sides of the arch, and less intense at night—a complete reversal of the impression your eyes receive.

"We put one 500-watt sealed-beam lamp every six inches, concealed in troughs which extend across the width of the arch at the balcony level," Kelly explained. "There are 200 of them in all."

I asked Kelly, in view of the astronomical quantities of power he often specified, if the electric companies were prepared for the kind of lighting he'd like to see. "It bothers me," he said quite seriously, "to think of all the energy we'd need, with present equipment, to give us the proper sort of artificial light. Luminescent glass panels, which will soon be available, may help in lighting walls by providing a direct, diffused source instead of costly reflected 'washed' light. But even when we use direct diffused light from overhead, our efforts are puny compared to daylight. An overcast day, outdoors, will provide 1000 foot-candles. The average school or office illumination runs about thirty foot-candles, which is double the light of twenty years ago. We've provided from eighty to 100 at desk height in the Seagram Building offices. We also stepped up the brightness on the walls of the elevator shafts in the Seagram lobby to fifty foot-candles, which is at least five times as much as before."

Kliegl Brothers, who have been lighting stage and movie studios for the past fifty years, built Seagram's superpowered "wall washers" to Kelly's specifications. "Dick Kelly got us to build the original wall-washer shovel light which is so widely used today," I was told by Robert Langer, head of the firm's architectural-light department. "Architectural light was just a side line at that time. It's a big share of our business now." A wall-washer shovel, he explained, is a fixture concealed in the ceiling which beams its light through a narrow hole partially covered by a tiny lid which looks like a shovel.

Langer has equipped almost all of the gambling rooms in Nevada and in Cuba with concealed ceiling lights which focus intense illumination on playing surfaces, crap tables in particular. Kelly directed the first installation in the Desert Inn, in Las Vegas.

"Gamblers are superstitious," Langer said. "The Desert Inn had a great run of luck shortly after they'd followed Kelly's advice. It wasn't long before we were busy copying his job all over Las Vegas."

Kelly, who was not on his own at Desert Inn, but working for a decorator, had to import klieg-light technicians from Hollywood to get the crap-table lights focused properly. In most instances, where he is employed by the owner as consultant, a competent electrical contractor would be on the job. The strangest crew of workmen he ever assembled was at the Virgin Isle Hotel, near the town of Charlotte Amalie on St. Thomas Island. "The owner had elected to be his own contractor," he told me, "and when I went down to the islands just a couple of weeks before the place was scheduled to open I found most of the natives on the job hardly knew how to splice a wire. Nine



## You be the Judge

By JOSÉ SCHORR

The burglars, afraid to take time to open the safe, carried it bodily away. The insurance company refused to pay the store owner for the loss. It pointed out that the policy insured him only against a safe robbery "by such force and violence as left visible marks" on the safe. The owner sued.

"The language in that policy was obviously intended to exclude inside jobs," the owner argued. "When burglars carry a safe out of the building, that should be force and violence enough to satisfy any insurance company."

"Sheer theory," the company lawyer commented. "For all anyone knows, the burglars may have subsequently opened the safe by using the combination. In that case, we are not liable."

If you were the judge, would you make the insurance company pay?

The company did not have to pay. see, unequivocally, that the marks  
The court said "it was entitled to were visible before it paid."

Based upon a 1956 Florida decision.



tenths of the fixtures hadn't been installed."

The innkeeper didn't seem particularly disturbed. Kelly was frantic. Then the owner had a bright idea. "A planeload of French waiters has just arrived," he told Kelly. "They're on my payroll. Why not put them to work?"

So Kelly took what he could get. "I borrowed a technician from the local radio station," he recalls, "and we trained the waiters to sort out and preassemble fixtures. One way or another we got enough light installed so that the first guests didn't have to eat before dark and go to bed."

One of the fixtures Kelly designed for the Virgin Isle Hotel is a hooded outdoor light, little more than knee high. A long row of them lights the walk and roadway up a hillside to the hotel. "The regularly spaced lights illuminate your path and the low-growing shrubbery," Kelly explains, "but are low enough not to shine in your eyes when you drive up the road." Kliegl built them and has since sold "Virgin Island walk lamps" all over the United States.

Outdoor lighting of homes and other buildings is only beginning, Kelly believes. An outstanding illustration of the way he uses light to accent architectural line and a complementary landscape is on display every night on upper Fifth Avenue, in New York City, at the Frick Museum. The night display there, however, is but a small edition of the million-dollar illumination of the General Motors Technical Center at Detroit, which floodlights the corners of Saarinen's colored-tile buildings, shrubs, trees and expanses of lawn. The grass and foliage are lighted by fluorescent lamps. "The leaves not only reflect, they have a luminescence from this light source," Kelly says, "which Saarinen and I decided to recommend after running tests in his garden."

Kelly has also experimented with "play of brilliants" in the garden and outdoor living room, notably at one Dallas, Texas, home where the path to a brightly illuminated patio was flanked by wax candles in huge hurricane lamps. "Play of brilliants excites the optic nerves and heightens all sensation," he says. "It sharpens the wit and even quickens the appetite."

These are the reasons why Kelly recommends hard, direct light in dining rooms, "either from a concealed source overhead or from the flames of candles or the twinkle of a chandelier. The soft, diffused light that is comfortable almost everywhere else makes food look mushy. Hard light brings brilliance from liquids, glass and silver." It makes the eyes sparkle too. Feminine preference for candlelight is mistakenly ascribed to the "softness" of the light, he says. "The light is from a direct source, and therefore hard, but low enough in intensity to be flattering."

The play of brilliants from chandeliers is the fun side of Kelly's work. It is more closely allied with what he calls "providing glamour" than with architecture. His triumph in such decoration hangs in the lobby of New York's Barbizon-Plaza Hotel—a complex symmetrical assembly of glittering gold and silver rods, tipped by 192 twinkling, pea-sized electric bulbs. The fixture is fourteen feet in diameter. There are no wires. The current, only six volts, reaches the tiny bulbs through the metal rods, which are cleverly insulated where they join to form sockets.

Small, low-voltage lights fascinate Kelly, who anticipates that they will get wide use. He has put them in his own living room, spotted like little stars in a window drape of coarsely woven, spun white rayon, which is also washed with overhead light. The same starlit material is planned to cover one immense wall in the

restaurant now nearing completion in the Seagram Building.

Kelly, incidentally, lived up to his own lighting creed in his newly remodeled and redecorated Fifth Avenue home. There are forty-three apartments in his building. Forty-two of them, all together, use only twice as much electricity as Kelly's apartment alone.

"The lighting in my home, or that in the Burden apartment, is obviously more elaborate than most families need or can afford," he says. "But in how many homes has even one per cent of the total cost

gone into lighting? There's a great gap between the comfort and utility that light could bring into our homes, and what we're getting today. That gap will narrow, I'm sure, as people become aware of their reactions to better light in offices, museums and other public places. They'll want to make it work for them at home too."

There's still a lag in the architect's understanding and use of artificial light, Kelly believes. "He is persistent and insatiable," said his friend, Philip Johnson. "Dealing with Richard is not unlike bargaining with an Arab merchant. He asks

for at least twice as much as he expects in the lighting budget, and you naturally offer only half. I doubt that he'll ever admit he's satisfied with the results."

Kelly agrees. "Lighting is such a large part of the visual arts—architecture, most of all—that I'm sure the best we can do today will be inadequate tomorrow. I can logically project a great many techniques in lighting to improve people's lives or to make a house more beautiful," he says, "but it's all theory until we have the record of experience, which we are only beginning to write." THE END

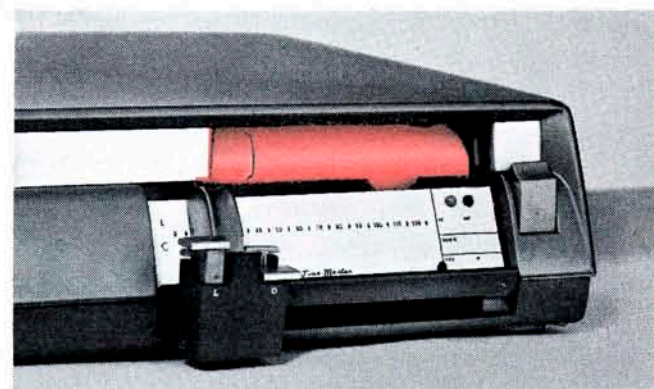
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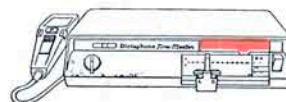
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