

Role of the Food Industry in Advanced Supermarket Design and Refrigeration

The Supermarket-Friend or Foe of the Community?

Food 70's

Creates awareness of the "total supermarket" and its effect on the environment. Also suggests future changes to make the supermarket a better neighbor

Joseph K. Tanaka
Hussman Refrigeration Co.
St. Louis, Missouri

● The area a supermarket occupies in a community is considerable. It is more than the number of square feet within the four walls, it is the parking lot, and it must include the access drives. When you replace an acre or more of green ground with an acre or more of black tar and gravel for the top of the building and the blacktop for the parking lot, then the supermarket is guilty of destroying the habitats of countless living things. The destruction of plant and trees is the destruction of a source of life sustaining oxygen.

I shouldn't be too harsh ... because the poor housekeeping of the supermarket does sustain life. The roaches and rats love the supermarket. The dirty supermarket keeps them alive. These forms of life are not ones that will endear the supermarket to the heart of the community.

The building and grounds must shed rain and snow. The runoff adds to the erosion and to the problems of controlling our swollen streams.

The parking lot is a breeding ground for air pollution. The automatic choke may be the motorist answer to easy starting of his automobile engine - he is not bothered with the troublesome adjusting of air to gas ratio but the too rich mixture contributes to air pollution. The number of cars can in time contribute sufficient contaminants that will be injurious to health.

It can become so bad that a sniffing monitor may some day be placed on the

parking lot to determine the safe level.

Beyond that level the parking lot may be placed off limits.

Some communities by law require greenery on parking lots. I don't believe in legislative beauty. Landscaping by law is stiff and staid and standard. Voluntary planting is the answer. Why not a planter box at the base of your sign on the roadside? Or why not a planter on the pole or on the sign itself. Why not a potted sign?

I have just submitted a master plan for a shopping center with high rise apartments, restaurant, shops and a pier onto a lake. The lake must be improved, dredged to provide marine shopping. It is a total concept - you live in the center, you shop there, you entertain, you relax. This concept was initiated by the owner of the supermarket.

Why not a self-contained super supermarket? Why not place it in a glass bubble? A national chain of supermarkets was contemplating a market in a 200 ft. diameter Dymaxion Geodesic Dome. The center of the dome would have been 100 ft. above the floor.

Why not a bubble?

Drive up to the entering opening. Cut your automobile engine. Mechanical fingers grab the car. Direct it to the start of your shopping. You get out - the car proceeds to a parking stall.

Under the bubble is a controlled climate. Why not - we have climatized malls. It is one small step to total shopping. One will not have to worry that rain of snow or hail will keep your customer from your door.

I have found this to be true with a St. Louis shopping center. I drive the car from my garage into the sheltered parking level of the department store garage.

Snow is a problem. In one of the Scandanavian countries, deep wells are a part of the parking lot. Into these grate covered openings, the snow is bull-dozed.

Why not use the heat of the engine room and pipe it to the parking lot and melt the snow and ice.

Why not cover the parking lot with colored asphalt??

Why not with astroturf?

The spillage of light onto near-by homes must be controlled.

We must avoid the luminous polution of our communities.

I quote from ECONOMICS OF POLLUTION - Ed Dale....."For more than a century, the average output of each worker for each hour worked has risen between 2% and 3% a year. This is due not only to new machines, but also to better managerial methods and a more skilled labor force. This is PRODUCTIVITY.

We are not about to give up Productivity and every increase productivity adds to output.

This means electric power ... power to heat and cool your store...and heat produced means smoke pollution by the utilities.

It means cans and bottles -

It means steel with its air and water pollution.

It means paper, etc and etc.

In 1957 - only 13 years ago - our gross national product was 453 billion. In 1969, it was \$728 billion, that is an increase of nearly \$300 billion in tin cans, auto exhaust, paper --- it is an increase of 60%

The 13 years preceding the growth, increase was only \$100 billion --- and in the second 13, it rose \$300 billion. In the next 13, it will rise more than \$500 billion" End of Quotation.

With our population and our rate of productivity increasing, the problem of solid waste disposal is reaching monumental proportions.

The supermarket solved the problem with the incinerator and ash disposal. In increasing numbers local ordinances prohibit the use of incinerators.

The reasons were obvious. Smoke was polluting the atmosphere and ashes were dirtying the clothes on the line and the cars parked in the driveways.

You have turned to the compactor. It makes big trash into little trash. In time, what will we do with mountains of little trash. We have been filling mines, dumping it on deserts and sinking it in the ocean and even leaving it on the moon.

The compactor is a noise polluter. In some areas it cannot be used during certain hours.

You thought you had it made with non-returnables. I was with a market on the west coast recently. The market had been in the planning stages for a year. I asked the owner what are you doing about glass and cans. His mouth dropped. Yes, he is now considering what to do with the returned non-returnables.

We need compactors for bottles. A friend of mine is in the rock crushing machinery business. He tossed a soda bottle into his machinery and crushed it into a fine powder. You could find a bottle crusher in your back room. You will have to separate bottles by color into four separate bins. One for clear glass, one for light green and one for dark green and one for amber.

Many years ago I designed an oil can crusher for filling stations. It compacted the can and squeezed a few drops of oil into drum. You may find a can crusher in your back room.

A few days ago I was in a supermarket checking on some Decor items. Standing in opened cases were frozen food items. The cases were on the floor outside the frozen food case. It was evident from the frost accumulating on the packages that they had been there for some time.

If by chance, the purchaser complains about the thawed product, that the taste had deteriorated or that the nutrient value had been affected or that the quality has changed the supermarket will say that the case manufacturer is at fault. The case is not holding temperature or that the food manufacturer is shipping inferior products (you know how it is these days!).

The fault is the manager. The chain that started when that product, perhaps string beans started to grow, was nourished, picked and packed, prepared and packaged to bring the best possible product to the customer. The weak link was the manager. He needs a stronger moral responsibility of delivering the best possible food to his customer. If he doesn't, he is a foe of the customer - he is a foe of the community.

Yes, there will be a tighter control. This can mean tighter managerial inspection, customer surveillance, legislative action, etc.

I have an idea. The customer should require a time temperature tape on each box of refrigerated food products. If the product sets in a higher temperature than desirable, the tape turns red. The longer it stays out, the longer the red stripe or greater the area. The customer would then be safe guarded with a tell-tale indicator.

Wastes are the inevitable by-product of our standard of living. The manufacturer constantly strives to reduce waste, use offal or scrap. A classic example is the manufacturer of bottle caps. He stamps hundreds of discs out of sheet metal - what to do with a sheet of metal with holes - a smart manufacturer uses the sheets with its holes to sandwich dust collecting material and thus we have filters for heat and air conditioning systems.

The manufacturer seeks to reduce the cost of his product by reducing waste. It is not the manufacturer that we must worry about...it is us. As Pogo sez, "We have met the enemy and it is us."

The amount of trash we discard is mountainous. It affects the community, the planet. You have heard over and over again, we will suffocate in our own trash.

Our rivers and streams are sewers. In our time, you can remember seeing the bottom of creeks...yes, an occasional

tin can that will have rusted and disappeared by the time you re-visited the area, not so with aluminum cans.

The air is polluted. Now we cannot see to the bottom of our rivers. Soon in our jets as we look to the bottom of our ocean of air we will not see the bottom.

George Wald, Nobel Prize winning biologist has said that "life on earth is threatened with extinction within the next 15 to 30 years."

Salvage is one way of re-using things. But unfortunately, trends are toward less, not more salvage. Prices for salvage, paper and rags have declined. Only the boy scouts seem to find it worth collecting newspaper and magazines. Even the trash collector does not find it profitable to collect paper.

The University of California says "each American household of four throws away enough heat energy in trash to run the family car for a year".

Imagine the energy that the supermarket discards in trash, incinerators, etc.

The one place you are throwing money away is overhead ...not the obvious fixed costs but in the heat energy of the fluorescent lamps and ballasts. There is sizeable heat loss in 150 f.c. ...why not use this heat.

There is another area of community concern. The supermarket is the target of robbers and burglars.

I know one shopper who will turn around and will not enter a store if an armored money truck is stationed nearby. She feels the store is enticing enough to robbers without encouraging them with additional attractions.

What can we do? The complete credit card store is one answer, but it will not be the universal answer. Less cash on the premise is not the answer. The hold-up murders of Convenience Stores in the southeast this summer are factual evidence that a few dollars is reward enough for acts of violence.

The answers are not forthcoming. Partial answers such as keeping small cash on hand, safe box, armed guards, etc.

As attractive targets for burglars and robbers, you are not friends of the community.

I am not organizing a group to "Stamp out Supermarkets, Eat Out."

I believe our economy must continue in productivity and population.

The waste that is the result of this productivity must receive the same creative know-how for its reduction or elimination.

The supermarket must be more than a supplier of demands - it must always be aware of its place in the community. It must continue to be a friend of the community. ●

EDITOR'S NOTE: The discussion which followed these three presentations centered around the following major issues:

1. Legal and social pressures upon the supermarket to become more aware of its environment in terms of esthetics, waste removal, traffic and pollution; as well as the cost of responding the other pressures.
2. Differences in design concepts between inter-city and suburban stores.
3. Research in the whole area of refrigeration, how are priorities set? Who will take the lead, etc.?

The Food Distribution Research Society is deeply indebted to the Hussman Refrigeration Company for conducting an excellent tour of their research facilities. The Society also wishes to express its thanks to Mr. Edward J. Schnuck for providing the opportunity for the group to tour one of his firms supermarkets.