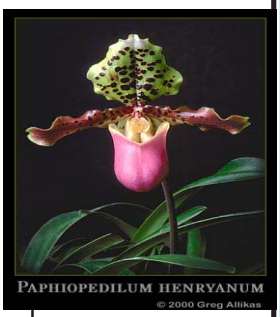
F.Y.I.

FOOD SERVICE PLANNING AND ENGINEERING
Summertime 2004

HOPKINS FOODSERVICE SPECIALISTS, INC.



He who is fair is [only] fair to look upon, but he who is good will soon be fair also.

Sappho
The Tenth Muse
600 BC

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Dear Associate,

In summer, the world teems with beauty in a loud way. It's enough to make us want to grab and hold on. One way to do that is to understand what makes the beautiful so we can reproduce it in our work and in our creative play.

Many people flitter through life—enjoying this, disdaining that, without another thought about why or how—but not us. Artists and scientists peel layers of knowledge to get at the core of life because it's in the subsurface where we grow civilization.

That's why the concept of the math of beauty intrigues me so, and I thought it might intrigue you too. As food service designers our work is fundamentally functional, and for the most part your work is too. It's when we can salt our work with beauty that the value of our labor soars. Beauty illuminates. Let's add more of it to our world.

Next time you raise a glass with a friend, make a toast to math.

I hope this summer rejuvenates you in mind, body and soul, and that we'll have an opportunity to talk about it while working together.

Sincerely yours,

Lynn Hopkins

Image and Likeness

The Math of Beauty

Ever since mankind dissected the first frog, our curiosity about a thing's components has spun out of control. The cell, the atom, the table of chemical elements have all revealed an invisible list of ingredients for this marvelous world. How far we have come from the days of the Neolithic Scottish village of Skara Brae! How our perspective changes as we build upon each other's discoveries and creativity.

Around 1666, Newton showed us a world that was like a machine of parts where stable and predictable effects could be determined by their causes. His worldview was structured, linear and departmentalized. Quantum physics erased that concept to show us a subatomic world of particles that do not exist independently, but are observed ONLY in relation to something else. Big difference!

Similarly, Euclid (325—265 B.C.) gave us tidy geometric shapes that formed the way we have designed buildings ever since. In 1975, a brilliant Pole named Benoit Mandelbrot, with the aid of the computer, proved the theory of fractal geometry, a new mathematical universe, a new geometry with as much system and generality as Euclid's, and a new physical science. How will our understanding of fractals affect future building design? Perhaps in as astonishing ways as its effect on cinematography and art.


Stone carvers of the National Cathedral

A fractal, says Alan Beck, "is any pattern that reveals greater complexity as it is enlarged. Thus fractals graphically portray the notion of worlds 'within worlds' that has obsessed Western culture from its tenth century beginnings." An excellent explanation of how this process works may be found at www.mathforum.org/alejandre/applet.mandlebrot.html

The more we learn, the simpler the world becomes. Instead of seeing the world as infinite numbers of shapes, (*Please turn over*)

SUMMER FRUIT

WORKPLACE
Einhorn Yaffee Prescott:
Saint Elizabeth's Hospital
Fox & Fowle:
New York Office Building
Gensler:
Dickstein Shapiro et al
The New York Times
Holabird & Root:
NFATC
Kling:
AMGEN
Leo A Daly:
Teamsters Headquarters
SOM:
U.S. Embassy-Moscow

IDIQs
Architect of the Capitol:
Ewing Cole, HSMM, Kling, SOM
National Archives:
EYP, SmithGroup
COE TransAtlantic:
Jacobs
FLET-Homeland Security:
Dewberry, HDR
New York Schools:
Cannon, SOM
Smithsonian Institution:
Beyer Blinder Belle, Kling, SOM
New Jersey Schools:
DMR, EYP
Gruzen Samton
SOM, STV

EDUCATION
Michael Graves Architect:
St. Coletta School
MMM Design Group:
Virginia Military Institute
Polshek Partnership:
Frank Sinatra High School
Rafael Vinoly Architect:
Brooklyn College
SOM:
Saint Albans School

RECREATION
Beyer Blinder Belle:
Cooper Hewitt Museum of Design

TIME FOR YOU

Summertime Ditty from
The Little Prince
Antoine de Saint Exupery

But the shrub soon stopped growing, and began to get ready to produce a flower. The little prince, who was present at the first appearance of a huge bud, felt at once that some sort of miraculous apparition must emerge from it. But the flower was not satisfied to complete preparations for her beauty in the shelter of her green chamber. She chose her colors with greatest care. She dressed herself slowly. She adjusted her petals one by one. She did not wish to go out into the world all rumpled, like the field poppies. It was only in the full radiance of her beauty that she wished to appear. Oh yes!! She was a coquettish creature! And her mysterious adornment lasted for days and days.

Then one morning, exactly at sunrise, she suddenly showed herself. And, after working with all this painstaking precision, she yawned and said: "Ah! I am scarcely awake. I beg that you will excuse me. My petals are still disarranged..." "Oh! How beautiful you are!" "Am I not?" the flower responded sweetly. "And I was born at the same moment as the sun."

Christ and Madonna from Michelangelo's Pieta

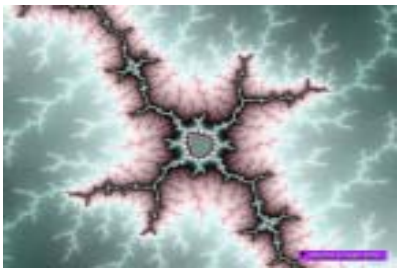
Our planning reduces your risk.
—Hopkins

(*Math of Beauty continued*...) let's imagine the world as orderly array of self-similar shapes and fewer true differences.

Self-similarity is an interesting mathematical concept that also contributes to the math of beauty.

Two squares of different sizes and color are said to be similar, but a square and a rectangle are not similar. Yet two rectangles can be similar even though their ratio or scale factor is different. Many shapes that are not fractals are self-similar. For example, take a trapezoid, copy it three times and arrange the copies in such a way that they form a larger trapezoid. This is self-similarity. Each small trapezoid is a copy of the larger one, at a different scale.

A Sierpinski Triangle is an example of the self-similarity of a fractal. The outline is an equilateral triangle within which are filled layers of triangles of various proportions, infinitely. To understand and play with a Sierpinski Triangle go to www.arcytech.org/java/fractals/sierpinski.shtml This elementary description of two math concepts is offered as a step toward a world of interesting thought and architectural creativity. Buildings that reflect this new geometry would be amazing!



A fractal image

The math of beauty is also the nature of peace. Even when things appear at odds with each other, there may be a fractal relationship at play. Looking at forms and relationships from the perspective of similarity, even unapparent similarity helps us to find a new order.

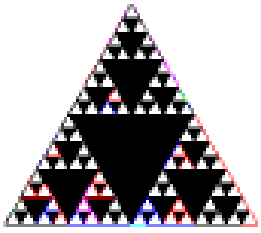
We live in a world of vast but often unapparent similarities. One idea multiplied infinitely takes us from chaos back to order. And those things that really are different, rebellious, and radical—like diseased cells—are in the minority.

The math of beauty is the code of life. To create beauty—in form, in relations—let's learn how to agree on some level. Math and science show us that although we may not find common ground on one level, it may exist after a few thousand iterations of our (apparently) different positions. For example, the hand is unlike the face. Yet, if you iterate it down, you realize the man is a fractal of self-similarities on the DNA level!

Promote the various understandings of similarity to promote beauty and peace. If you believe that God made man in His image and likeness, then you will understand that this concept has been around for a very long time. Peace.

Things exist by imitation of numbers.
—Pythagorus

Sierpinski Triangle



Vermeer's Maidservant Pouring Milk

ATHENS 2004

To commemorate the return of the Olympic Flame to Greece, I offer the following delicious Greek rice pudding recipe.

RIZOGALO

1 cup long-grain rice
6 cups milk
3/4 cups sugar
1 tablespoon butter
1 small stick of cinnamon
2 egg yolks at room temp
1/4 teaspoon finely grated lemon rind
1 teaspoon vanilla extract
Ground cinnamon for garnish

1. In a large saucepan, combine rice, milk, sugar, and butter. Cook over low heat, stirring frequently, for 1 to 1'1/2 hours, or until mixture is thick and creamy and the rice has absorbed the liquid and is soft. Add cinnamon stick about halfway through.

2. Just before removing the rice pudding from the heat, beat egg yolks until creamy in a medium-size bowl. Discard cinnamon stick and stir in grated lemon rind. Remove from heat and stir in vanilla. Add a little pudding at a time to the egg yolks, stirring all the while, then pour egg yolks into pudding and stir well with a wooden spoon.

3. Pour pudding into bowl(s) and refrigerate. Sprinkle with cinnamon and serve chilled.

Matisse at work