



YOU'VE ARRIVED.



At a recent national architectural convention and design exposition, an architect and principal of his own successful firm casually mentioned to Mark Graves, president of Ellison, "I knew I had 'arrived' in my profession when I specified my first Ellison Door."

That evening, as Mark recounted events of the busy day, he recalled the architect's words. Mark had heard similar stories from other architects and building owners throughout his years at Ellison. But this time the words resonated more clearly than ever.

"It's remarkable, really." Mark thought to himself as he retired to his hotel room. "Our doors mean far more than what we at Ellison realize. For us, it's all about precision, durability, beauty, performance. But for our customers, it's about attaining an important milestone in life – a personal achievement filled with greater meaning. All that – in a door? That's saying something."

Today, Ellison Custom Balanced Doors are found at marquee entrances of the most prestigious buildings throughout the world. Solid. Precise. Effortless.

You've arrived.

Welcome to Ellison Custom Balanced Doors.



"I KNEW I HAD 'ARR IVED' IN MY PROFESSION WHEN I SPECIFIED MY FIRST ELLISON DOOR."



By 1927, our nation's buildings were becoming taller and tighter, making traditional commercial entry doors increasingly difficult to operate, due to mounting internal stack pressures.

That year, brothers Edward and Oliver Ellison of Jamestown, New York, who had been involved with manufacturing of custom doors sine 1913, set out to solve this problem. They named their breakthrough patent "the balanced door" and the Ellison Custom Balanced Door was born in 1932. "Nowhere Excelled" became Ellison's earliest slogan, and while the brothers firmly believed its bold claim, it would take decades of real-world use and abuse of their doors to prove it true.

For over 80 years, Ellison has continued to innovate the balanced door, always improving upon the original design to make its doors even easier to operate and maintain, and more durable, efficient and beautiful. What remains unchanged is the company's unwavering commitment to the custom crafting of each Balanced Door to the highest possible standards.

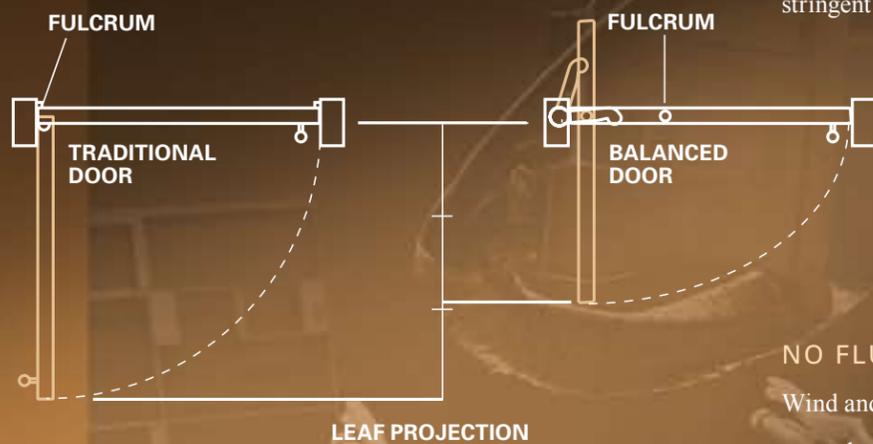
Customers are often surprised to learn that every drawing and casting for every custom door ever crafted by Ellison remains on file in Ellison's archives. Good thing too, because some of the first Ellison Custom Balanced Doors, installed long ago in 1932, remain in operation to this day.

Proof positive that Ellison is indeed Nowhere Excelled.

## NOWHERE EXCELLED



The hallmark of an Ellison Custom Balanced Door – what amazes architects, building owners and users alike – is its smooth, virtuously effortless operation, regardless of the door’s size and weight. The earliest advertisements for the Ellison Balanced Door marveled, “It’s the door you can open with just one finger.” This advantage means a far more robust and secure entry door, made from the strongest, most durable materials, without affecting ease of operation. What makes this possible is the door’s unique engineering that leverages the forces of nature to its advantage.



#### GAIN MECHANICAL ADVANTAGE

With a traditional butt- or pivot-hinged door, the fulcrum is located at the edge of the door. Opening requires the user to pull or push the full weight of the door. Whereas, with an Ellison Balanced Door, the fulcrum is repositioned inward from the edge of the door by roughly one third the width of the door, providing a mechanical advantage for the user.

#### PRESSURE EQUALIZATION

Hinged doors require a user to pull the entire surface area of the door against external wind loads or internal stack pressures. Whereas, the hinge side of an Ellison Balanced Door swings inward, allowing wind or building pressures to partly assist in opening the door.

#### REDUCED LEAF PROJECTION

Due to the flattened elliptical opening path of an Ellison Balanced Door, in it’s fully opened position, the door projects to the exterior more than one third less than a conventional door. This is an especially valuable feature in locations with stringent sidewalk projection codes like New York City.

#### NO FLUTTER

Wind and building pressures cause traditionally-hinged entry doors to not remain fully closed. This can compromise building security and energy efficiency. The Ellison Balanced Door’s unique design prevents door flutter, helping to keep buildings safe and reduce energy costs.

#### LONGEST LIFE CYCLE OF ANY DOOR

With a traditional butt- or pivot-hinged door, the full weight of the door is supported by the hinges and frame, creating a continuous lateral stress, ultimately causing door failure. However, with the Ellison Balanced Door, the weight of the door is transferred to a steel pivot shaft measuring the full height of the door, and then transferred downward directly to the floor. By eliminating lateral stresses, the Ellison Balanced Door achieves a virtually limitless operational lifespan.

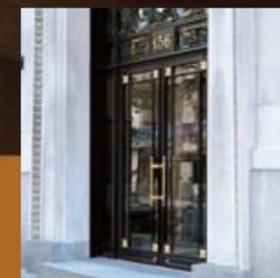


## THE DOOR YOU CAN OPEN WITH JUST ONE FINGER

#### REDUCED OPENING FORCE

Compare the greatly reduced forces required to open an Ellison Balanced Door to a conventional door of the same size under a range of wind pressures.

Lbs. of Pressure Required to Open Doors with 5 lbs. of Spring Pressure Under Various Wind Speeds		
Wind Speed (m.p.h.)	Conventional Door	Ellison Balanced Door
10	8	6
20	16	8
30	31	11
40	52	18
50	78	26
60	110	35



## A SYSTEM OF THREE MAJOR COMPONENTS

Every door manufactured by Ellison is custom in terms of materials, size, design, and finishes. However, all Ellison Balanced Doors are a system comprised of three major components: the frame, the door, and the balanced hardware. Together, these components produce a door system with considerable advantages.

### TOP ARM

- One of two connections between the door leaf and door frame
- A 1" diameter stainless steel pivot pin connects one end of the Top Arm to the Door Top Pivot
- Other end of Top Arm is welded to a heavy duty, full height Steel Tube Pivot Shaft

### DOOR TOP PIVOT

- Located on the top door rail
- Accepts a 1" diameter stainless steel pivot pin to connect the door leaf to the Top Arm
- Fully adjustable to ensure proper door clearances

### STEEL PIVOT SHAFT ASSEMBLY: TORSION BAR CLOSER SPRING

- Provides closing force for the door
- Heavy duty design for heavy doors and heavy traffic
- Features an integrated adjustment for closing pressure
- Connects to the Floor Box

### STEEL PIVOT SHAFT ASSEMBLY: STEEL TUBE PIVOT SHAFT

- Houses the Torsion Bar Closer Spring
- Top and Bottom Arms are welded to it

### CONSTRUCTION

Minimum 2.75" wide stiles and top rails

Internal corner welded continuous "Tie Channel" sub-frame for rigidity located around the glass area.

A unitized super structure is created by spot welding the internal .09" continuous "Tie Channel" and top and bottom channels directly through the external .09" door face (stainless steel or bronze)

Minimum 6" high bottom rail

## THE ANATOMY OF THE ELLISON BALANCED DOOR

### CHECK AND DOOR GUIDE ASSEMBLY

- Provides fully adjustable door closing and latching speeds
- Located in the frame header
- Serviceable without removing the door leaf

### DOOR ROLLER GUIDE

- The fulcrum point of the door leaf
- Rolls along a guide channel located in the header as the door opens and closes
- Sealed treated bearing steel roller
- Cast manganese housing

### BOTTOM ARM

- One of two connections between the door leaf and door frame
- A stainless steel pivot pin connects one end of the Bottom Arm to the Door Bottom Pivot
- Contains a non-corrosive and self-lubricating bearing
- Other end of Bottom Arm is welded to a heavy duty, full height Steel Tube Pivot Shaft

### DOOR BOTTOM PIVOT

- Located on the bottom door rail
- Accepts a stainless steel pivot pin to connect the door leaf to the Bottom Arm

### FLOOR BOX

- A base plate to accept the Steel Pivot Shaft assembly
- Permits adjustment of door closing force via the Torsion Bar Closer Spring
- Will not rust or corrode
- No floor cut-out required

### SEMI-AUTOMATIC HOLD OPEN

- Located on the bottom rail
- Holds door in the 90° open position
- Spring-loaded

Each Ellison Balanced Door is built to the custom specifications according to numerous design variables. Throughout design phase, Ellison representatives work closely with the building team, providing design consultation to ensure that your doors meet ADA guidelines and advise regarding code requirements.

#### SIZE

Individual Ellison Custom Balanced Doors have been built from 33 to 48 inches in width and up to 12 feet in height. Unlike traditional hinge or pivot doors, the balanced door's ease of operation remains unaffected by its size and weight.

#### STANDARD OR CUSTOM CONFIGURATIONS



STANDARD



CUSTOM

### UNLIMITED COMBINATIONS OF DESIGN OPTIONS...

There are numerous standard door configurations to choose from. These include more traditional looking doors with stiles, rails and a specific configuration of lites; to doors with extremely thin stiles; to all glass doors with no stiles. Of course, if you have a special vision for your door beyond our standard configurations, Ellison will help you to realize it.

#### EXPOSED OR CONCEALED SHAFTS



EXPOSED



CONCEALED

Because an Ellison Custom Balanced Door is a system, design options are also available for the frame and balanced hardware. With a concealed shaft design, the door's torsion bar/closer spring and steel pivot shaft assembly are housed within the door frame. But you also have the option to beautifully clad this assembly and expose it.

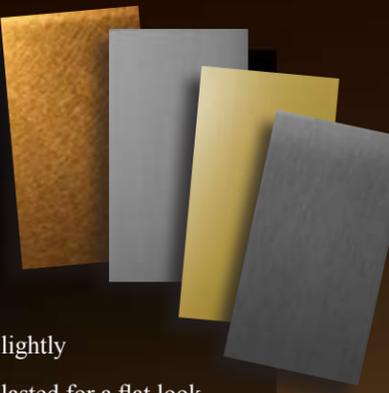




...TO ACHIEVE YOUR VISION OF A MARQUEE DOOR.

### MATERIALS

Stainless steel, bronze, aluminum, wood, or glass – Ellison works with virtually every traditional door material to meet your design vision.



### FINISHES

Your door's metal finish can be polished, lightly brushed to a soft satin appearance, bead blasted for a flat look, or finished with a non-directional jitterbug pattern. Aluminum doors can be color-coated to your exact specification with high-performance architectural finishes and are available in a range of anodized colors as well as an almost limitless variety of Kynar® and powder coat paint colors.



### POWER OPERATION

Ellison's low-energy PowerNow power operators are specifically designed for use with Ellison Custom Balanced Doors. Concealed in the header frame above the door, PowerNow employs an actuating arm for on-demand opening force and then retracts to allow the door's standard hardware to provide closing force. During manual operation, PowerNow-equipped doors operate as standard Ellison balanced doors. The operator is not engaged, reducing operator wear and maintaining Ellison's signature manual ease of operation.



### DOOR PULLS, PANIC BARS AND LOCKS

Ellison Custom Balanced Doors are easily equipped with a wide variety of door pulls, panic bars, and traditional or magnetic-type locks to suit your aesthetic and functional requirements.



## DESIGN

Ellison designers work closely with your building team to explore your vision and requirements for your project's entry doors. ADA guidelines are reviewed and local codes are considered. Materials, configurations, finishes, and other design options are explored and determined. Specifications, drawings and details are developed for your review and approval.

## CASTING AND TOOLING

All balanced hardware including the check and guide assembly, top and bottom arms and pivots, and floor boxes are cast in bronze and manganese in Ellison's own foundry. The current balanced hardware is cast with modern permanent molds and equipment. However, earlier forms of sand casting are still employed to manufacture replacement parts for earlier generations of Ellison doors. Cast parts are refined through a combination of hand tooling and modern CNC machines. As foundry operations produce ample heat, Ellison operates its foundry only in the cold winter months when this heat can be captured for supplemental factory and office heating.

## PATTERNING, CUTTING AND FORMING

Formed-up stainless steel and bronze Balanced Door Systems are patterned to .09" sheets. These patterns are cut and then formed into the doors' exterior skins and internal subframe. Patterning is carefully plotted to minimize scrap. All scrap is reclaimed for recycling.

ELLISON IS WHERE SKILLED CRAFTSMANSHIP



## WELDING

All of the formed parts of the door are fused together by skilled welders. Other door manufacturers will merely tack weld the subframe to the exterior skin to minimize finishing work. This, however, results in a weak assembly that will eventually fail in time with door usage. Instead, an Ellison Balanced Door's exterior skin is spot welded to its internal subframe at close intervals. This welding method is employed by the auto industry and produces the longest-lasting weld.

## SHOEING

Welding together the various formed pieces of the door will inevitably produce very slight inconsistencies in the size and shape of the door. Getting the assembled door to geometric perfection requires a skilled craftsman to carefully straighten (shoe) the door with hand tools and a very critical eye.

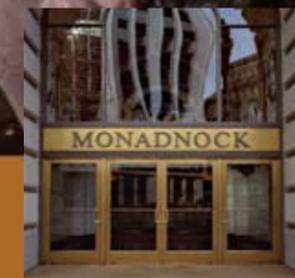
## GRINDING AND SANDING

All weld marks must be ground flat and sanded away. When finished, there are no visible seams or tooling marks of any kind, and the door system appears as though it's been carved from a single block of metal.

## FINISHING

Doors and frames undergo a prescribed finish treatment. Talented finishers use a polishing machine to produce a brilliant finish. Sanding tables are used to produce a satin brushed or jitterbug finish. And within a bead blasting chamber, Ellison doors are given a beautiful soft matte finish.

...MEETS HIGH TECH PRECISION...



## INSPECTION

Before any Ellison Custom Balanced Door System is packaged for delivery, it is first completely assembled and hung for an exhaustive final inspection. Any finish marring or deficiency in any single part or in the overall operation of the door is cause for rejection.

## CRATING

All surfaces of your door receive a protective film and are carefully crated to ensure that your door arrives to the job site in the same pristine condition that it left the Ellison factory.

## DELIVERY

Your door arrives to your job site with the finished hardware already attached to the doors and with all the necessary anchor screws required for installation. Included in your shipment are detailed, yet easy to understand, handling and installation instructions to ensure that your contractor installs your Ellison Custom Balanced Door efficiently and perfectly.

## WARRANTY

### Ellison Custom Balanced Door 10-Year Warranty

*Ellison Bronze, Inc. warrants the materials used in its doors, frames and closing hardware, and the fabrication of the above items against defect in material or workmanship for a period of ten years from the date of acceptance of the completed Ellison product. During the ten year period of warranty Ellison agrees to repair, correct or replace any defective material or workmanship within reasonable time after receipt of written notice of such defect from the architect, owner or buyer. This warranty does not cover the surface discoloration of copper alloy sheets or extrusions, the breakdown of protective coatings when furnished to the architect's specification and applied as directed, or to adjustments made necessary by the shifting or settling of the building structure. This warranty does not apply to door pulls, locks or other hardware not originally manufactured by Ellison.*

**Ellison**  
CUSTOM BALANCED DOORS

...TO DELIVER UNSURPASSED QUALITY.

MADE IN THE U.S.A.



[www.ellisonbronze.com](http://www.ellisonbronze.com)

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ISO 9001  
REGISTERED QUALITY  
SYSTEM