

THE WARBLER

AN EDUCATIONAL WEEKLY

ISSUE

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NOVEMBER 23, 2022

Dear Student, Artist, Thinker, Friend,

I've always found architectural and mechanical operations difficult to understand, which has helped increase my admiration for the women in those fields of work. In a society that popularizes gender stereotypes, it can be difficult to go against the grain. That's why this week's edition of *The Warbler* is so special to me. While it may be common to assume some women are successful in the fields of architecture and engineering, I don't think the accomplishments of these female figures are nearly as commercialized as their counterparts.

In this newsletter, we are working to bridge the gap between popularizing feminine and masculine success in STEM careers. As you will come to find out, there are many women who have contributed to the creation of numerous historical artifacts. From castles to theatres, there is no shortage of beautiful architectural pieces that were created by the hands of women.

Additionally, we share stories of Black architects, women who have fought harder than most to earn respect and notoriety.

Overall, I'm excited for you to learn about the strong, brilliant, **female architects and engineers** who pioneered the way for millions. Without early representation within the STEM world, who knows what today would be like. I hope you find the rest of this newsletter to be entertaining and educational. Have a great week!

Abigail and the APAEP Team



“In nature, there is no separation between design, engineering, and fabrication; the bone does it all.”

Neri Oxman // USA-based Israeli architect, designer, scientist

WORDS INSIDE

FOUND INSIDE “THE MOST EXCEPTIONAL ...”

compendium | a collection of concise but detailed information about a certain topic

superlative | the highest quality or degree

FOUND INSIDE POEM

poultice | a soft, moist mass of material

FOUND INSIDE “ONLY 11% ...”

Fourth Industrial Revolution | current trend of automation and data exchange in manufacturing technologies

FOUND INSIDE RANDOM NEST

acumen | the ability to make good judgments and quick decisions

(From left to right) Architects Elizabeth Carter Brooks, Amaza Lee Meredith, and Norma Merrick Sklarek

Photos courtesy of the New Bedford Historical Society, the New York State Historic Preservation Office and copyright Gruen Associates.

OPINION

Only 11% of Architects and Engineers are Women

Let's Build a New Pipeline for Female Talent

BY NAADIYA MOOSAJEE | *World Economic Forum* | July 25, 2017

I am a female engineer. When I introduce myself, I still get gasps or looks of surprise. This isn't a surprise to me as women account for just 11% of employees in architecture and engineering.

There are a number of reasons for this, including what has been dubbed "the pipeline challenge," that is points all along the engineering talent pipeline where we lose women and girls.

At the beginning of the pipeline, girls are not aware of engineering careers. There is still a perception that it's something for the boys. As a civil engineer, people are surprised by my small stature as they expect heavy lifting when it comes to building mega infrastructure. I prefer to frame it as heavy lifting with the mind.

Sheer dumb luck

Most of the female engineers I know entered the profession in one of three ways: their dad, uncle or another man was an engineer and was their role model; a teacher said they were good at math and science and that's what engineers did, so they went to study engineering; or the third category, which is where I found myself, through "sheer dumb luck."

I got lucky and really enjoyed the aspect of solving humanity's greatest challenges as an engineer. It is why I have become a STEM (science, technology, engineering and mathematics) evangelist and co-founded WomEng to develop women engineers.

I have maintained that the Fourth Industrial Revolution will bring a unique opportunity to use technology not only to overcome development challenges, but also to help women break gender barriers and become creators and owners of technology, rather than just consumers. Our program has a number of elements, including creating an awareness of engineering careers and the future of work; providing skilled mentors for girls; providing access to local role models and funding for scholarships for engineering; and building confidence and acceptance that engineering is for everyone.

Pink hard hats

The last of these elements features our pink-hard-hat transformation exercise. We took the stereotypical hard hat seen on many construction sites and made it bright pink – fighting a stereotype with a stereotype. This has proven incredibly effective at inspiring girls and is a coveted item that has been worn by many

supporters, including Canadian Prime Minister Justin Trudeau at the World Economic Forum in Davos in 2016.

We have been running the GirlEng program since 2009 and in 2014 we saw girls, who started the program as high-school students, graduate as engineers, proving that simple interventions can have a lasting impact.



Naadiya Moosajee:
'As a female engineer,
when I introduce
myself I still get
looks of surprise'

No more 'missing middle'

When we talk about the pipeline, however, it's not enough to just open the talent pool at the beginning only to see it narrow very quickly. Many women leave the sector within three to five years, creating a "missing middle". The sector is experiencing a cohort of missing female talent, which presents a leadership vacuum and perpetuates the low number of senior women in the sector.

While the assumption has been that women leave to pursue other lifestyle choices like having families, another part of the challenge has been what we call the "world of one". Being the only female engineer within a company can cause female engineers to feel isolated and leave.

A second common reason behind the missing middle is a financial one, as STEM skills are desirable, and engineers are sought after by a variety of sectors where the pay is higher. Furthermore, the industry has generally been both slow to transform and welcome diversity. Many women leave rather than battle against barriers every day.

The sector needs to embrace other systemic changes, including providing better financial incentives and pay parity; creating an inclusive and respectful culture; and having male leaders champion the careers of female engineers. As we embark on the Fourth Industrial Revolution, STEM skills will be as vital as reading and writing. More importantly, so will skills such as empathy, teamwork and good communication, often considered more "feminine" skills. With these competencies in mind, female engineers are well placed to revolutionize engineering. ●

"The more clearly we can focus our attention on the wonders and realities of the universe about us, the less taste we shall have for destruction."

RACHEL CARSON
// Marine biologist,
conservationist,
and author

Edited
for space

HISTORY

“That [Most] Exceptional One”

*Early Black Female Architects*BY KATE REGGEV | *Madame Architect* | January 29, 2021

In her lively book *Where Are the Women Architects?*, author Despina Stratigakos notes that “the number of women working as architects remains stubbornly low” while “law and medicine, two equally demanding and traditionally male professions, have been much more successful in retaining and integrating women.” The first time I read that, I found myself nodding in agreement, and wondering along with Stratigakos when she asked, “So why do women still struggle to keep a toehold in architecture?”

The suggestion made it seem as though other professions — in particular better-paid ones like law and medicine — had figured it all out and had solved their equity issues, at least in terms of gender representation. And I had assumed that these other professions had also resolved issues of racial representation when it came to women in their respective fields, but I recently how very wrong I am: fewer than 2% of practicing physicians are Black women, not too far off from architecture, where 4% of registered architects are Black women.

And while this is some progress and there has been an increasing acknowledgement of the significant work and impact of Black architects thanks to various efforts by organizations, schools, media, and more, I’m also always looking back to the past and asking: Who have we forgotten? What projects have not received the attention and accolades they are due? What issues, hardships, and decisions did they face? And ultimately, what can we learn from history?

So, then, who were some of the earliest Black women in architecture? As landscape architect and author Dreck Spurlock Wilson points out in his invaluable *African American Architects: A Biographical Dictionary, 1865-1945*, African American architects have been designing and building houses and public buildings since 1865 (not to mention the countless enslaved involved in the physical labor of constructing buildings like the White House).

But a careful read of his book belies the truth: that even among this outstanding compendium of 160+ African American architects, a mere nine of these entries are women: Elizabeth Carter Brooks (1867-1951), Georgia Louise Harris Brown (1909-c. 1940), Mary Ramsay Channel Brown (1907-2006), Martha Ann Cassell Thompson (1925 -1968), Alberta Jeanette Cassell Butler (sister of Martha, 1926-2007), Alma Fairfax Murray Carlisle (1927-), Ethel Madison Bailey Furman (1893-1976), Beverly Loraine Greene (1915-1957), and Helen Eugenia Parker (1909-c. 1940).

Other early Black female architects not included in the book but more than worthy of recognition include Amaza Lee Meredith (1895–1984), Norma Merrick Sklarek (1926-2012), and Sharon Egretta Sutton (1941-).

Few as they may be, these women — along with their designs, ideas, and even just their mere presence — represented an immense willpower to overcome the many challenges that they faced. What, you may wonder, were their lives and built work like?

Let’s start with a little bit about their backgrounds: these women ranged from the children of people who were enslaved to the, daughters of immigrants; they grew up as far north as New Bedford, Massachusetts, as far south as Portsmouth, Virginia and as far west as Topeka, Kansas.

Some became interested in architecture because their father was an or real estate or construction. In general, most came from a family of some means where education was valued.

So what else did these women have in common? Virtually all of them expressed early interest and abilities in academics, most often art and mathematics, but frequently encountered roadblocks during their education and early career either due to their race, gender, or both.

One of the most fascinating and inspiring things I’ve noticed about these women’s careers is how they, unlike many of their white female counterparts, often defied the expectation that women could only work on residential projects. These early Black female architects often worked on large-scale, complex projects in the public realm, designing hospitals, corporate headquarters, shopping centers, skyscrapers, religious buildings, and more.

Their careers were studded with these types of superlatives that are both inspiring yet grim, heartening yet reflective of their times. It’s no coincidence that it wasn’t until World War II — a time when employment finally started to open up to women because of the war effort — that a Black woman became a licensed architect. If, as architect Pietro Belluschi stated, a woman in architecture was considered “that exceptional one,” then these early Black female architects must have been “that most exceptional one.” ●



Louise Harris Brown, 32 at the time this photo was published in *Ebony Magazine* in 1950

“Science makes people reach selflessly for truth and objectivity; it teaches people to accept reality, with wonder and admiration, not to mention the deep awe and joy that the natural order of things brings to the true scientist.”

NERI OXMAN // USA-based Israeli architect, designer, scientist

Edited for space

MATHEMATICS

Sudoku

#273 PUZZLE NO. 3074953

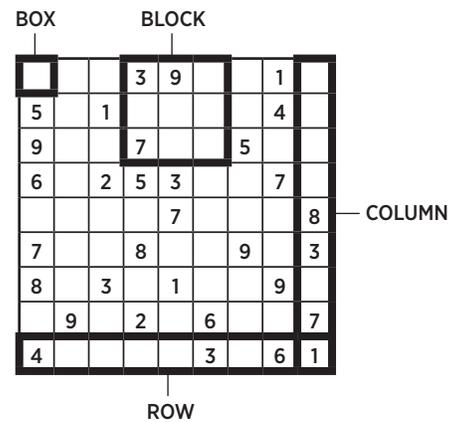
6		5		1	8			
						3		
	2		9					7
			2			5		6
						7		
		1	4					2
5					3	9	7	4
4				2	9		5	
3	7							

#274 PUZZLE NO. 4978010

								3
			6		5		1	
	7				9			
			5					7
	9			2		4		
2		3			6			5
5	2	8			3			7
		4				6		
	6			8		9		

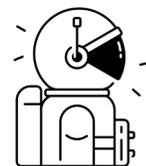
SUDOKU HOW-TO GUIDE

1. Each block, row, and column must contain the numbers 1-9.
2. Sudoku is a game of logic and reasoning, so you should not need to guess.
3. Don't repeat numbers within each block, row, or column.
4. Use the process of elimination to figure out the correct placement of numbers in each box.
5. The answers appear on the last page of this newsletter.



What the example will look like solved

2	4	8	3	9	5	7	1	6
5	7	1	6	2	8	3	4	9
9	3	6	7	4	1	5	8	2
6	8	2	5	3	9	1	7	4
3	5	9	1	7	4	6	2	8
7	1	4	8	6	2	9	5	3
8	6	3	4	1	7	2	9	5
1	9	5	2	8	6	4	3	7
4	2	7	9	5	3	8	6	1



“When I was in high school, I was certain that being an astronaut was my goal. Sally Ride was making her first flight into space and she had a real impact on me. Those ‘firsts’ kind of stick in your head and really become inspirations for you.”

KAREN NYBERG // NASA astronaut

DID YOU KNOW?

Katherine Johnson was a mathematician working for NASA for 35 years. She was one of the first Black women to be a NASA scientist by profession, and her story was told in the popular film *Hidden Figures*.

The number of women in board positions in STEM-related industries in 2020 was **19.2%**, an 18.3% increase over the previous year.

Mary Anderson invented the windshield wiper in 1903, years before Henry Ford industrialized automobile production.

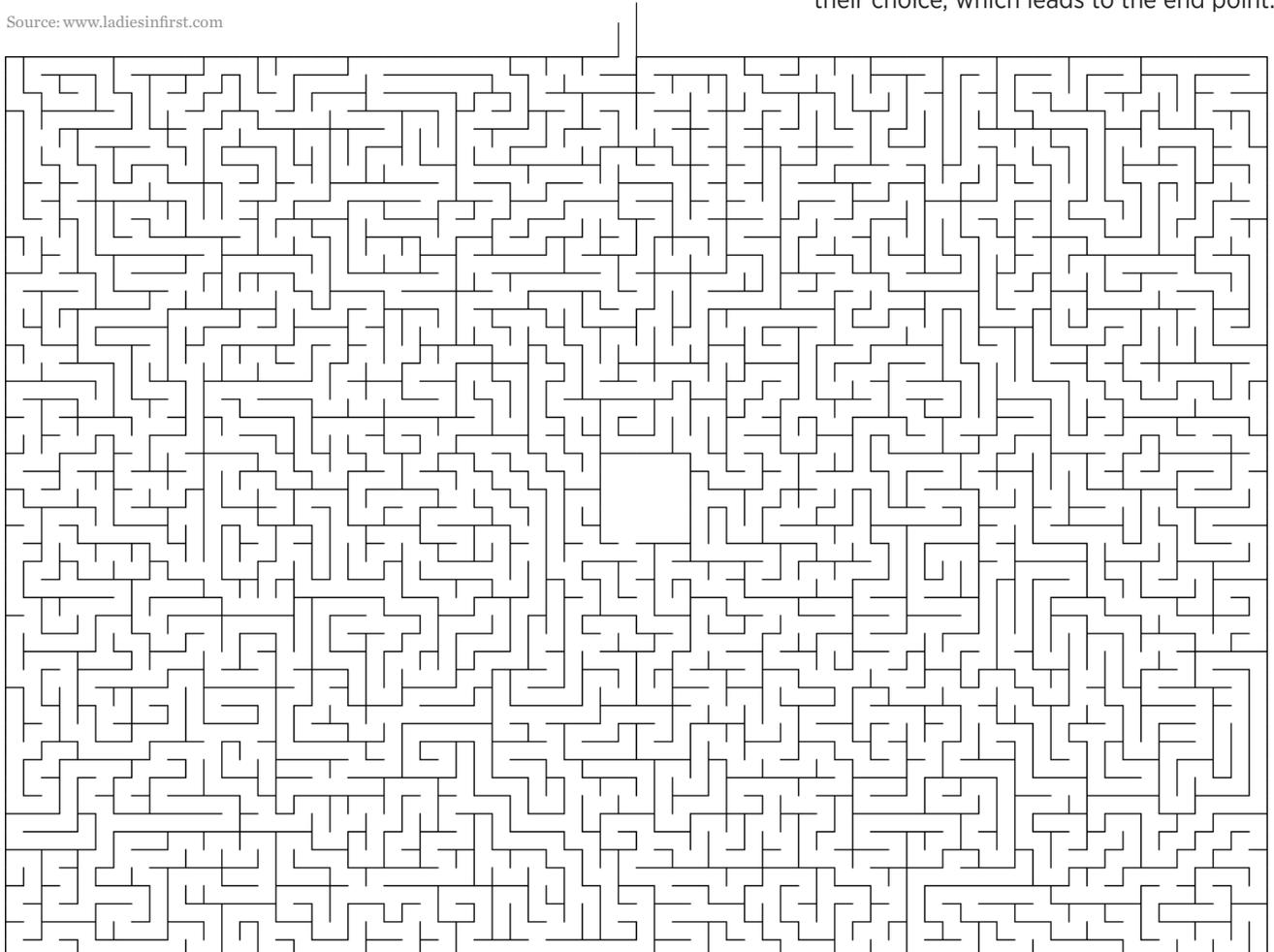
The first “computer program” was designed by a famous poet’s daughter in 1843. **Ada Byron Lovelace**, daughter of famous poet Lord Byron, published a paper that predicted the development of computer software, artificial intelligence, and computer music.

Marie Curie was the first person to win two Nobel Prizes for Science.

Source: www.ladiesinfirst.com



Maze This maze is a collection of paths, where there is both a start and ending point. The player starts from the start point and follows a path of their choice, which leads to the end point.



ART + CULTURE

The Applicant

BY SYLVIA PLATH

First, are you our sort of a person?
Do you wear
A glass eye, false teeth or a crutch,
A brace or a hook,
Rubber breasts or a rubber crotch,

Stitches to show something's missing? No, no? Then
How can we give you a thing?
Stop crying.
Open your hand.
Empty? Empty. Here is a hand

To fill it and willing
To bring teacups and roll away headaches
And do whatever you tell it.
Will you marry it?
It is guaranteed

To thumb shut your eyes at the end
And dissolve of sorrow.
We make new stock from the salt.
I notice you are stark naked.
How about this suit—

Black and stiff, but not a bad fit.
Will you marry it?
It is waterproof, shatterproof, proof
Against fire and bombs through the roof.
Believe me, they'll bury you in it.

Now your head, excuse me, is empty.
I have the ticket for that.
Come here, sweetie, out of the closet.
Well, what do you think of *that*?
Naked as paper to start

But in twenty-five years she'll be silver,
In fifty, gold.
A living doll, everywhere you look.
It can sew, it can cook,
It can talk, talk, talk.

It works, there is nothing wrong with it.
You have a hole, it's a poultice.
You have an eye, it's an image.
My boy, it's your last resort.
Will you marry it, marry it, marry it.

WRITING PROMPT

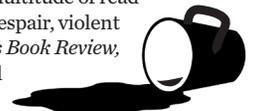
In this poem, the salesman presents marriage as the solution to all the deficits or problems of the applicant, implying the person is incomplete or empty without a marital agreement. We are often pressured to make decisions in attempts to right the "wrongs" that seem to be present in our lives. What does true growth to your emptiness look like? Using this as a prompt, illustrate or write a short essay, blog, poem, or illustration that describes how you complete yourself.

Word Search

V	T	R	S	L	S	D	I	R	Y	R	U	B	A
R	F	U	L	F	I	L	L	I	N	G	P	F	E
P	B	L	O	T	T	S	T	E	D	E	T	O	W
O	I	D	I	S	S	O	L	V	E	L	E	S	O
U	S	S	L	R	A	A	A	T	I	F	A	A	R
L	M	A	R	R	I	A	G	E	T	E	O	E	R
T	F	G	S	I	L	V	E	R	L	S	N	S	O
I	E	O	E	M	P	T	I	N	E	S	S	U	S
C	L	L	R	F	I	V	F	P	P	S	N	W	I
E	O	D	R	A	R	S	A	S	L	G	W	S	S
O	I	S	A	L	E	S	P	E	R	S	O	N	V
P	T	N	E	M	E	E	R	G	A	U	I	A	S
D	L	E	P	O	I	L	O	S	E	R	P	N	E
D	I	S	H	A	T	T	E	R	P	R	O	O	F

- | | | |
|-----------|--------------|----------|
| SILVER | SHATTERPROOF | DISSOLVE |
| MARRIAGE | SALESPERSON | GOLD |
| AGREEMENT | SORROW | BURY |
| EMPTINESS | FULFLLING | POULTICE |

Sylvia Plath was one of the most dynamic and admired poets of the 20th century. By the time her life ended at the age of 30, Plath already had a following in the literary community. In the ensuing years her work attracted the attention of a multitude of readers, who saw in her singular verse an attempt to catalogue despair, violent emotion, and obsession with death. In the *New York Times Book Review*, Joyce Carol Oates described Plath as "one of the most celebrated and controversial of postwar poets writing in English."



CONNECTIONS

Mother-Daughter Duo Defines the Architectural Odds

BY JULIETTE FUNES | USC News | May 21, 2013

Architecture is a beacon of innovation and creativity for those who want to bring to life novel design concepts through experimentation, research and exploration.

It is also, by and large, a man’s world, with few women as architect role models and leaders that a younger generation of aspiring female designers can look up to.

But if you ask Adele Chang and her daughter, Jessica Chang, defying expectations is what is going to allow women like them to be trailblazers in the architecture field and design community.

Adele Chang, a Hong Kong-born, California-trained architectural designer, watched Jessica Chang follow in her footsteps on May 17, 2013 when she graduated from the USC School of Architecture with a bachelor’s degree.

“There are as many ambitious females as there are males,” said Jessica Chang, who graduated magna cum laude and received the American Institute of Architects (AIA) Certificate for having the second-highest GPA in undergraduate studies. “I’m very optimistic right now. I don’t feel discouraged by any means.”

Still, the mother-daughter duo is somewhat of an anomaly in the architecture field, a grueling profession often filled with sleepless nights and nonstop deadlines.

According to a survey conducted by AIA in 2012, about half of architecture students are women, but just 17 percent are firm principals and partners. Only two women have been awarded the Pritzker Architecture Prize in its 34-year history: Zaha Hadid in 2004 and Kazuyo Sejima in 2010.

Small minorities in the architecture field, women often hit a glass ceiling, leave the profession or get pushed out during the different stages of their careers.

“It really takes years, decades and decades to grow as an architect,” Adele Chang said. “So while there are many women entering the profession now, they are mostly still too young to make an impact.”

“For the longest time, my work environment was

male,” said Adele Chang, one of two women who graduated from the architecture program at California State Polytechnic University, Pomona, in 1980.

“I think the challenge was not the lack of work,” she said. “It was the lack of role models and mentors. There were none.”

Though there wasn’t an overt glass ceiling, Adele Chang said she still felt hindered.

“With being female and my cultural background, I knew there was never a way I could schmooze with the clients — go to dinner or play golf and bond — the way my white male associates could,” she said.

Instead she made the leap to start her own firm close to her home in Pasadena, allowing her to find a balance between work and family.

Jessica Chang, too, said she dreams of starting her own firm, where she can design opera houses and art museums — and she has doesn’t have to stray too far to find a good example.

“Going through the program, it’s 50-50 as far as gender goes,” she said. “There’s a lot of female professors, and I never felt disadvantaged as a woman in school.”

Going off into the real world beyond the walls of USC, Jessica Chang has a piece of advice for her peers and those who follow behind her: “Don’t be afraid to do what you want to do in life, regardless of gender.”

Echoed her mother: “Believe in yourself.” ●



Adele Chang (top) and a couple of her residential architectural designs

<p>PROMISES PROMISES PROMISES</p>	<p>STOP</p>	<p>WEIGH</p>
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WORD PLAY A Rebus puzzle is a picture representation of a common word or phrase. How the letters/images appear within each box will give you clues to the answer! For example, if you saw the letters “LOOK ULEAP,” you could guess that the phrase is “Look before you leap.” *Answers are on the last page!*

FEATURE

Six Wonders Built by Pioneering Women Architects

BY JENNIFER BILLOCK | *Smithsonian Magazine* | March 9, 2021**Chateau de Chenonceau** | Chenonceaux, France

In France's Loire Valley, Château de Chenonceau is an impressive sight—the estate actually stretches across the River Cher. When Katherine Briçonnet's husband, Thomas Bohier, bought the property in 1513, it was just a run-down manor and mill. According to *Women in Architecture from History to Future*, Briçonnet supervised the renovation project and the addition of a pavilion while her husband was away—work that included leading the overall design. She's most known for a staircase she designed inside the house, a straight one that led to the second story. It was the first straight staircase in French history; prior to that, only spiral staircases were used. Briçonnet was so proud of her work on the house and pavilion that she had an inscription carved above the door to the courtyard: "S'il vient à point, me souviendra," or, "If it is built, I will be remembered."

Villa Benedetti | Rome, Italy

When Plautilla Bricci was commissioned to build the Villa Benedetti (also known as Villa Vascello) in Rome in 1663, she became not only the first woman architect in Italy, but also the first known professional woman architect in world history. The building's owner, Elpidio Benedetti, was the brother of Bricci's art teacher, Eufrosia Benedetti della Croce. Bricci had started her career as a painter before she had a change of heart.

"She learned painting in the studio with her father," Schwitalla says. "[But then] she said, no, I don't want to paint, I want to build [the buildings] my paintings are in. And so she got the commission to build the Villa Benedetti."

Bricci designed the villa to look like a Baroque ship, with curved walls, loggias and elaborate stucco work. The interior was covered in frescoes, some painted by Bricci herself. Though she was well-known as the architect for the building, when Benedetti published a description of the building in 1677, he credited Bricci's brother with the design. Even though she was officially the architect, it was still outside social norms to acknowledge a woman architect. Unfortunately, most of the building was destroyed in the 1849 French siege of Rome. The remainder of the building, a three-story yellow and white mansion, is currently owned by Grande Oriente d'Italia, the national headquarters for freemasons in Italy.

Hotel Lafayette | Buffalo New York

Louise Blanchard Bethune, the United States' first woman architect, was a force to be reckoned with.

When the construction department of the 1893 World's Columbian Exposition in Chicago announced in 1891 that they were looking for a woman architect to design one of the buildings, she loudly and notably objected. She was adamant that women should be paid as much as men, and as such, refused to compete for the \$1,000 prize, which was pittance compared to the \$10,000 paid to men who designed for the exposition.

More than a decade later, in 1904, the construction of Buffalo, New York's Hotel Lafayette was completed. Blanchard Bethune was the chief architect on the project, a 225-room red brick and white terra-cotta French Renaissance style hotel. Each guest room in the hotel had a working telephone and both hot and cold running water, which was considered groundbreaking and a novelty at the time. The hotel is still in operation and was added to the National Register of Historic Places in 2010.

Hearst Castle | San Simeon, California

Architect Julia Morgan may have designed hundreds of buildings, but she's best known for California's Hearst Castle, which mixes Spanish Colonial, Gothic, Neo-Classical and Mediterranean Revival style all in one property. Morgan began her education studying engineering in California, but moved to Paris afterwards to become the first woman ever admitted to the architecture program at the École des Beaux-Arts in 1898.

Morgan returned to the U.S. in 1902 and became the first licensed woman architect in California, starting her own firm in 1904. Newspaper publisher William Randolph Hearst hired her in 1919 to build Hearst Castle and the surrounding guesthouses. Morgan worked on the project for the next 28 years, personally designing nearly every aspect of the project. She brought in Icelandic moss, reindeer and Spanish antiques. She helped Hearst seamlessly integrate his art collection into the buildings. She even designed the castle's private zoo, which consisted of both native and exotic animals,



Architect Julia Morgan is best known for California's Hearst Castle (top).

Hotel Lafayette
Photo courtesy of Hotel at the Lafayette

"I really believe in the idea of the future."

ZAHA HADID
// Iraqi British architect and painter

like bears, zebras, leopards and camels. Hearst initially started selling the zoo animals in 1937 when he hit financial trouble, but like the castle, that endeavor was never completely finished. Today, visitors can still see zebras grazing in warm weather. When Hearst could no longer afford it, construction stopped in 1947.

Royal Shakespeare Theatre | Stratford-upon-Avon, England
In 1926, the Shakespeare Memorial Theatre in Stratford-upon-Avon burned down. Shortly after, an international architecture competition took place to find a replacement. More than 70 people submitted designs—including just one woman, Elisabeth Scott. At the time, the UK had only been training women in architecture for nine years. When the judges picked her design as the winner in 1928, the media was shocked, publishing stories with headlines like “Girl Architect Beats Men” and “Unknown Girl’s Leap to Fame.” She was the first woman in the UK to win an international architecture competition.

The simple modernist design with Art Deco embellishments and Nordic influence was meant to both serve its purpose as a theatre and flow with the River Avon it sat along. It wasn’t received well by everyone—mostly, older men had problems with the design. But Scott was clear through the entire process what purpose her design served, noting in her acceptance of the win that, “I belong to the modernist school of architects. By that I mean I believe the function of the building to be the most important thing to be considered.”

When the theater officially opened in 1932, a crowd of more than 100,000 gathered and the entire spectacle was broadcast live to the United States. A number of renovations have been made on the building, and the theater is still in operation today, now known as the Royal Shakespeare Theatre.

UNESCO Headquarters | Paris, France
Architect Beverly Loraine Greene, born in Chicago in 1915, paved the way for Black women architects. She was the first licensed Black woman architect in the United States, earning that distinction in 1942. After a stint



UNESCO Headquarters Photo by Thomas Samson/AFP via Getty Images

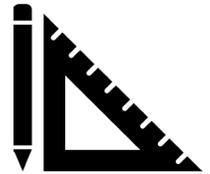
working with the Chicago Housing Authority, during which she faced pervasive racism and an inability to get jobs, she moved to New York City, where architecture work was easier to come by. Early on, she worked on the Stuyvesant Town project, a segregated housing community that didn’t allow Black residents in 1945. But from there she moved up the ranks, collaborating with modernist icons like Marcel Breuer. The two worked with two other architecture firms to design the Y-shaped UNESCO Headquarters in Paris. The building, which opened in 1958, is also called the “three-pointed star” and is famous for its groundbreaking construction method: the entire thing is held up by 72 concrete piling columns. ●

Edited for space

RANDOM-NEST

5 Famous Female Engineers in History

BY MONICA SHEPHERD | *WorkflowMax* | January 29, 2021



Edith Clarke | In 1918, Edith Clarke became the first woman to earn an electrical engineering degree from the Massachusetts Institute of Technology. Edith worked from 1919 until 1945 at General Electric, becoming a salaried electrical engineer after just two years of employment (quite an achievement for a woman at this time).

In 1921 she received her first patent for the Clarke Calculator — a device that was used to solve electric power transmission line issues.

Emily Roebling was an early champion for breaking the glass ceiling for women in STEM fields. She is best known for her contribution to the construction of the Brooklyn Bridge, completed in 1883.

Lillian Gilbreth is heralded as a pioneer in the field of industrial engineering and psychology, and often referred to as the ‘Mother of Modern Management’. She became the first female member of the American Society of Mechanical Engineers and worked with General Electric to improve the design of kitchen and household appliances. As one of her son’s wrote, “If the only way to enter a man’s field was through the kitchen door, that’s the way she’d enter.” Interestingly though, she was apparently a terrible cook.

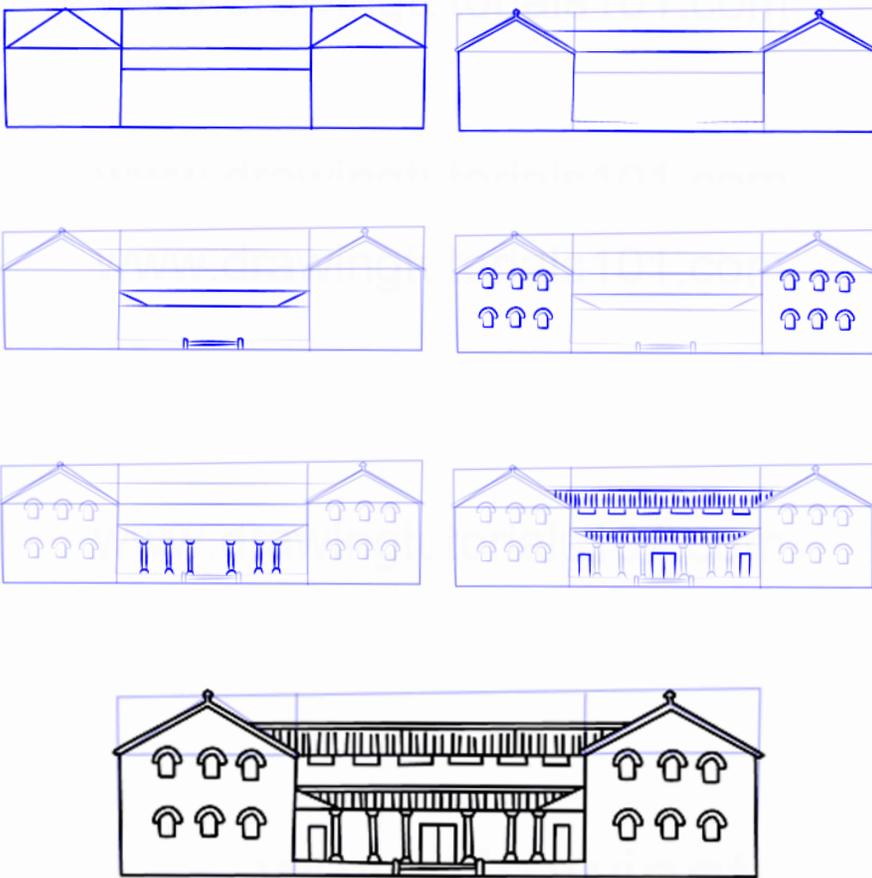
Stephanie Kwolek | Chances are you’ve heard of Kevlar, a stiff synthetic material five times as strong as steel. Because of its resistance to corrosion and flames, it is the main element in the production of bullet-proof vests, as well as a whole range of everyday products including safety helmets, camping gear, snow skis and cables.

Hedy Lamarr | Better known as a star of the silver screen in the 1930s and 40s, actress Hedy Lamarr proved she was much more than a pretty face. In fact, if it wasn’t for Hedy, we likely wouldn’t have Wi-Fi today.

Taking time out of her acting schedule, Lamarr shattered stereotypes by using engineering acumen ahead of her time to invent a remote-controlled communications system for the US military.

Edited for space

HOW TO DRAW ...



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Words of Encouragement

Since I can remember, men have been placed on a pedestal. Expected to always be the smarter, stronger, more effective human being. This week, we are trying to change those expectations. As long as men have been successful in architecture / engineering careers, women have done just the same. Though they may not be as widely recognized, women have been impacting the way society exists for centuries.

I was really excited to research and learn about influential women in STEM this week. As a psychology major and social work minor, I cannot imagine how the ratio of men to women in STEM courses and careers has affected my female identifying classmates and their performance in those fields. Because I see women as resilient and intelligent individuals, I like to believe that they see these representational inequalities as motivation. Through the articles provided, we know that some women in this field have that mindset. They see the underrepresentation within their field as an invitation to make change. My hope is for this week's edition of *The Warbler* is to inspire its reader(s) to seek ways to create change as well.

You are capable. You are strong. You are amazing. Have a great week!

Abigail

Answers

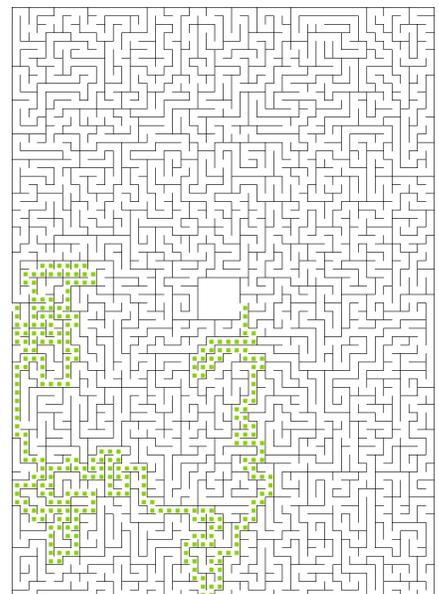
SUDOKU #273

6	7	5	3	1	8	4	2	9
1	4	9	6	7	2	3	8	5
8	2	3	9	5	4	1	6	7
7	8	4	2	3	1	5	9	6
2	3	6	8	9	5	7	4	1
9	5	1	4	6	7	8	3	2
5	6	2	1	8	3	9	7	4
4	1	8	7	2	9	6	5	3
3	9	7	5	4	6	2	1	8

SUDOKU #274

6	5	2	8	1	4	7	9	3
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5	2	8	9	6	3	1	7	4
9	3	4	1	5	7	6	8	2
1	6	7	4	8	2	9	3	5

Page 5 MAZE



Page 7 REBUS PUZZLE

1. Broken Promises
2. Shortstop
3. Losing weight

UNTIL NEXT TIME