



# Labor Market Demand & Hiring Practices: Engineering, Architecture & Robotics

**NYCCTE** |

NEW YORK CITY  
Career and Technical Education

# Guiding Questions

## Schools and Postsecondary Partners

- How do CTE programs currently prepare students for these practices, and where are opportunities for growth and further alignment?

## Industry Partners

- How does your experience and insight add depth and understanding of these trends?
- What resources, skills and opportunities do you have that could help educators stay up-to-date with industry trends?

# Analysis: Primary takeaways

- Between 2012 & 2017 employment in architecture, engineering & related services grew by 8K (27%).
- In NYC, architectural services has the largest number of jobs in this industry.
- Schools preparing students for entry-level jobs in this industry should focus on helping students gain the skills needed to succeed in a higher education environment, as almost all jobs in this field that pay a living wage in NYC require a Bachelors degree.
- Labor market data and industry commission agrees – AutoCAD is an important credential to gain entry-level employment in this field.
- Using online search engines and job sites are an effective way of searching for an entry-level job in this field.

# How Schools Can Use This Info

- Identify lesson plans where elements of labor market info can be added to expand students' understanding of the industry
- Consider how your work readiness training needs to be improved to align with current hiring practices
- Present this information to your Self Study Group to keep your school apprised of current trends
- Consider how you can continue to grow and stay aware of industry practices through professional development

# Past Trends of Unemployment

## Unemployment Rate in Nov 2018

3.7% in NYC

3.5% in US

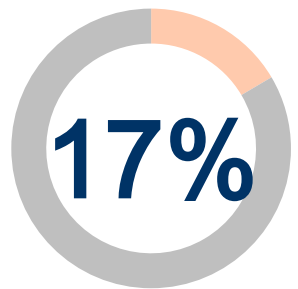
## Percentage Point Decline from Nov 2016 to Nov 2018

-1.0% in NYC

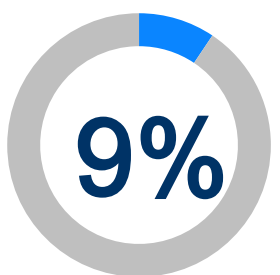
-0.9% in US

# NYC Employment Top 6 Sectors, 2017

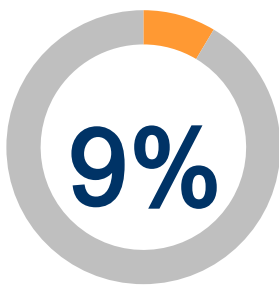
In 2017, there were approximately 4.3 Million NYC Jobs. Over half of these jobs are in the six largest sectors:



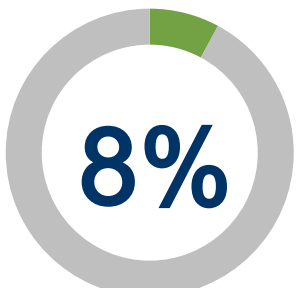
Healthcare



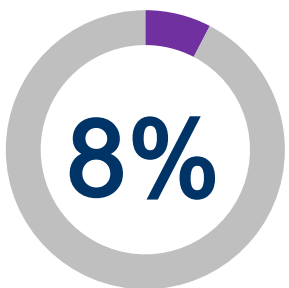
Professional Services



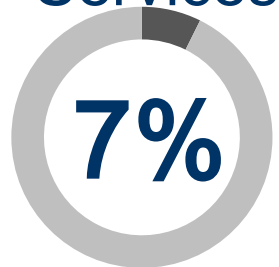
Accommodation & Food Services



Retail Trade



Finance & Insurance



Educational Services

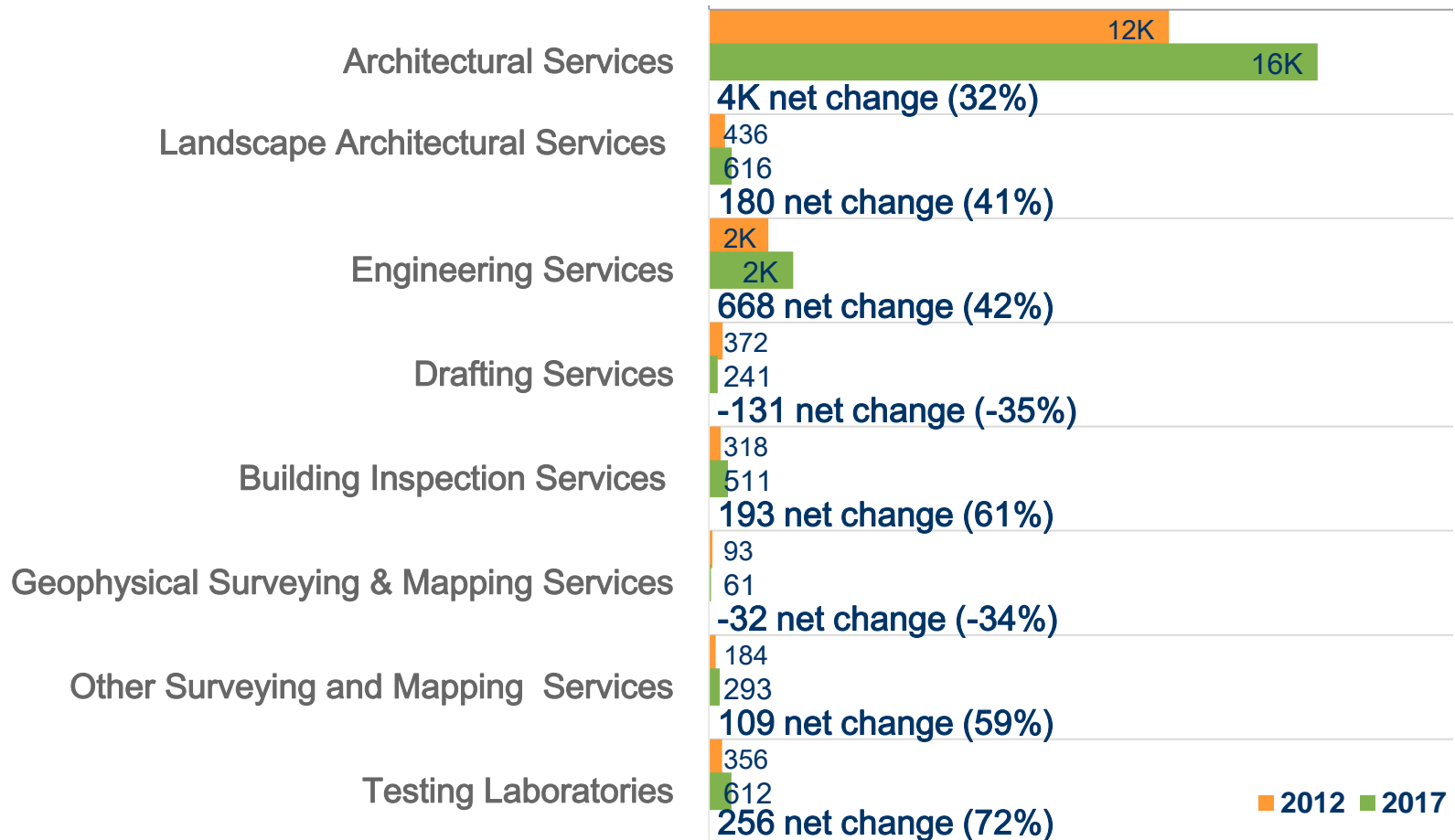
Source | NYCLMIS analysis of 2017 Annual Quarterly Census of Employment and Wages data files from U.S. Bureau of Labor Statistics. Includes all ownership. Per BLS confidentiality policy, some data (~6%) has been suppressed in order to protect the identity of employers and is therefore excluded from employment totals.

# Sectors with the Greatest Projected Job Growth in NYC 2014-2024

Sector	Net Change in Job Growth
Health Care & Social Assistance	24%
Professional & Business Services	22%
Accommodation & Food Services	25%
Educational Services	14%
Construction	29%
Other Services	18%
Retail Trade	10%
Financial Actives	7%
Arts, Entertainment & Recreation	22%
Transportation & Warehousing	10%

Source | NYCLMIS analysis of 2017 Annual Quarterly Census of Employment and Wages data files from U.S. Bureau of Labor Statistics. Includes all ownership. Per BLS confidentiality policy, some data has been suppressed in order to protect the identity of employers and is therefore excluded from employment totals.

# Architecture, Engineering, and Robotics: Employment Growth in NYC 2012-2017



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# Architecture, Engineering, and Robotics: Common Occupations

Occupation	Education	No. Jobs	Med. Wage
Civil Engineers	Bachelors	7K	\$94K
Cost Estimators	Bachelors	3K	\$81K
Architectural and Civil Drafters	Bachelors	3K	\$61K
Interior Designers	Bachelors	3K	\$67K
Civil Engineering Technicians	Bachelors	620	\$63K
Surveyors	Bachelors	590	\$74K
Surveying and Mapping Technicians	HS/HSE	290	\$49K

Source | NYCLMIS analysis of statewide 2018 Q1 Occupational Employment Statistics and 2014-2024 Long-Term Occupational Employment Projections from the New York State Department of Labor.

# Online Job Ads: Employers & Job Titles

**Employers with the most ads:**  
 Share of Total Online Ads 2018  
 5K ads ( 18% of ads did not specify employer)

9.97%	Hire Resolve
1.69%	HNTB
1.60%	AECOM
1.51%	Hays Us
1.49%	HDR
1.44%	Parsons Brinckerhoff
1.09%	STV Group
1.00%	Jacobs Engineering Group
0.84%	Arup Group
0.01%	WSP Global

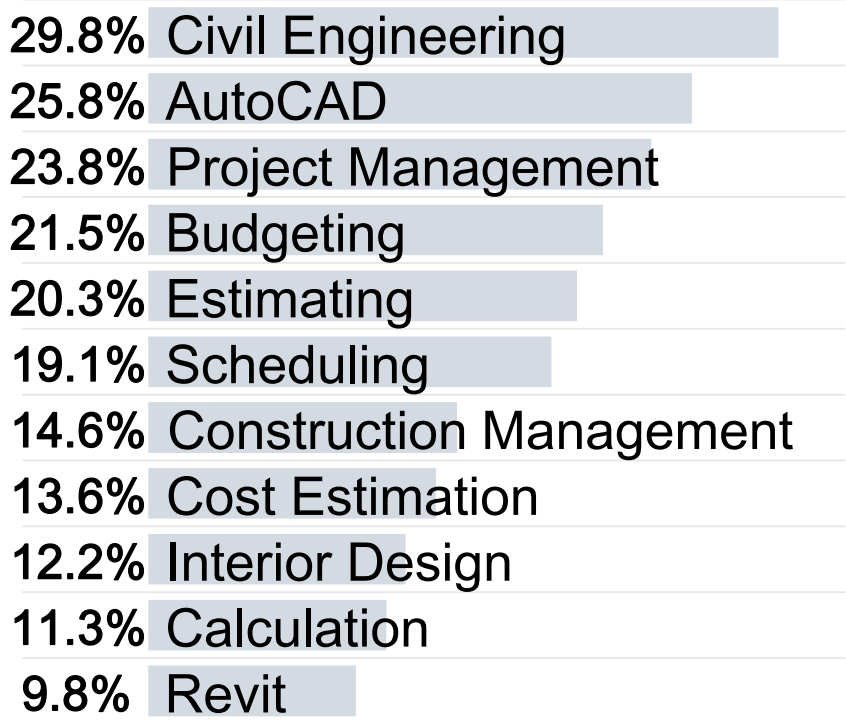
**Most commonly advertised titles:**  
 Share of Total Online Ads 2018  
 5K ads (all ads specified job titles)

11.55%	Estimator
9.46%	Interior Designer
6.99%	Civil Engineer
5.35%	Structural Engineer
3.86%	Construction Estimator
3.29%	Construction Engineer
2.31%	Geotechnical Engineer
2.31%	Project Engineer
1.84%	Transportation Engineer
1.58%	Senior Structural Engineer

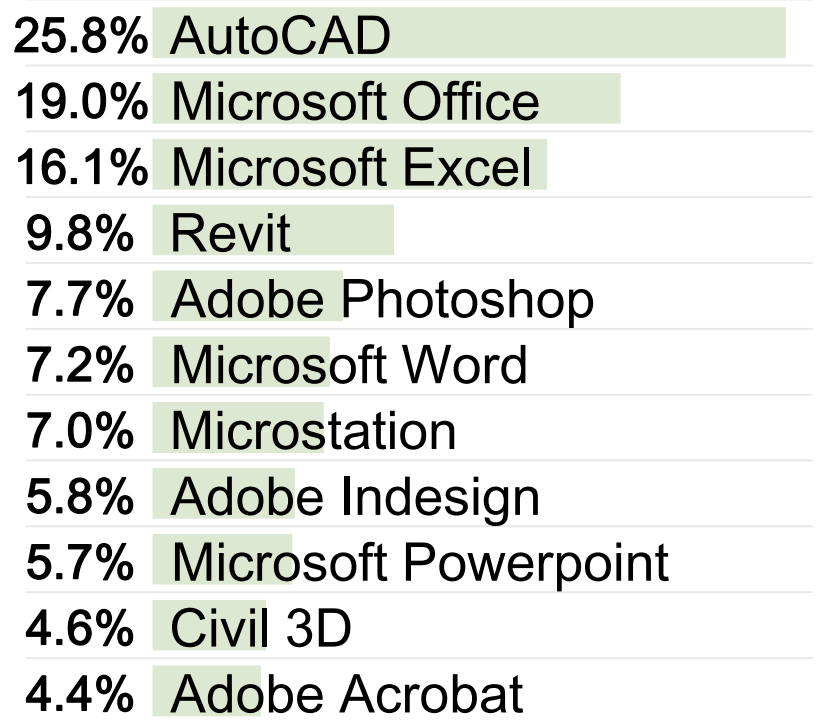
Source | NYCLMIS analysis of Burning Glass Technologies' Labor Insight.

# Analysis of Online Job Ads: Skills

**Most requested specialized skills:**  
Share of Total Online Ads 2018  
5K ads ( 13% ads did not specify specialized skills)



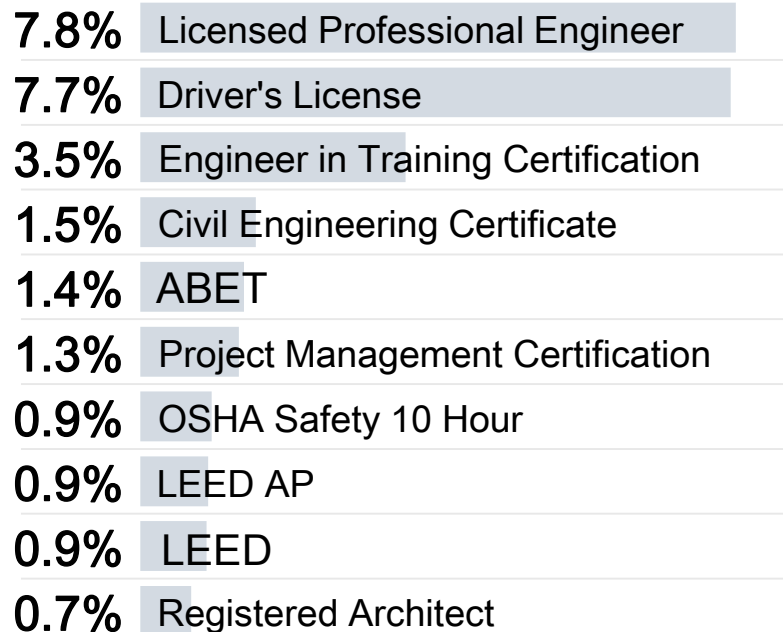
**Most requested technical skills:**  
Share of Total Online Ads 2018  
5K ads ( 13% ads did not specify technical skills)



Source | NYCLMIS analysis of Burning Glass Technologies' Labor Insight.

# Architecture, Engineering, and Robotics: Job Trend Analysis, CTE Certifications

**Most requested certifications:**  
Share of Total Online Ads 2018  
5K ads (77% of ads did not specify certificates)



## CTE

- Autodesk Certified User: AutoCAD, Inventor, Revit and Maya
- NOCTI-Pre Engineering
- NOCTI-Architectural Drafting
- C-Tech-Copper Based Networking, Fiber Optics, Energy Management System
- Certified Solid Works Associate

Source: Labor Insight, Burning Glass Technologies 2018, DOE-CTE School Survey

**What entry level job titles do you include in your CTE coursework and career pathway conversations with students that relates to the CTE track?**

1. CAAD Technician/ Civil Engineering Technician/ Electrical Engineer/ Mechanical Drafter
2. Junior Engineer
3. Quality Control Inspector

Source| CTE-School Survey 2018

# How are candidates typically recruited in the EAR industry?

1. Online Ads
2. Professional Network
3. College Fair

*Source | CTE Industry Survey 2018*

# How are candidates typically screened in the EAR Industry?

1. Resume
2. Certificates/Credentials
3. Portfolio Reviews

*Source | CTE Industry Survey 2018*

*Sources | TE Industry Survey 2018*

## Which of the EAR credentials are valued in entry level candidates in your industry?

1. Autodesk Certified User: AutoCAD
2. Revit

## How are candidates' certifications typically verified?

1. Listed on Resumes
2. Request Documentation

*Source | CTE Industry Survey 2018*



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