

# K-12 ARCHITECTURE AND DESIGN EDUCATION IN OUT OF SCHOOL TIME: THE LANDSCAPE IN CHICAGO IN THE 2017-2018 SCHOOL YEAR

GABRIELLE LYON, CATHERINE BAKER AND JOSH KALOV

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[architecture.org/ArchitectureEducationReport](http://architecture.org/ArchitectureEducationReport)

# CHICAGO ARCHITECTURE CENTER

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## **ACKNOWLEDGEMENTS**

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## **THANK YOU TO CHICAGO ARCHITECTURE EDUCATION NETWORK MEMBERS**

ACE Mentor Chicago, After School Matters, AIA Community Interface Committee: Architects in Schools Program, Archeworks, Architecture Studio Camp, Arquitectos, Beenice Design, Benito Juarez Community Academy, Chicago Architecture Biennial, Chicago Department of Family & Support Services, Chicago Learning Exchange, Chicago Loop Alliance, Chicago Mobile Makers, Chicago Public Schools, City Colleges of Chicago, Chicago Metropolitan Planning Association; Chicago Public Schools; Farpoint Development; Farr Associates; Frank Lloyd Wright Trust; Great Cities Institute at UIC; Harold Washington College; IFF; VAMOS at IIT; Illinois Institute of Technology, City Colleges of Chicago; Illinois Chapter, National Organization of Minority Architects; Landon Bone Baker; Marwen; NEXT.cc; National Organization of Minority Architects; Northwestern University School of Education and Social Policy; Oak Park Education Foundation; School of Art Institute of Chicago; Solquest design unlimited; SOMA Design Consultants; Spartan Surfaces; Territory; UIC College of Architecture, Design, and the Arts; YWCA Metropolitan Chicago.

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# OPENING LETTER

May 31, 2019

On behalf of Chicago Architecture Center and AIA Chicago we are pleased to present the first report ever produced that documents Chicago's K-12 architecture and design education landscape.

This report demonstrates the conviction of a diverse set of organizations that the worlds of architecture and design must be made available to all of Chicago's youth. These findings must be of equal interest to architects and designers as they are to educators and policy makers.

In this, the city of architecture, there can be no more pressing issue than ensuring that today's young Chicagoans have the tools to shape the city of the future.

We congratulate the Chicago Architecture Education Network on this report and encourage all readers to join us in implementing its recommendations.

Sincerely,



**Lynn Osmond**

*Hon AIA, CAE,  
President &  
CEO*



**Zurich Esposito**

*Hon. AIA, Executive  
Vice President  
AIA Chicago*

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# CHAPTER 1: OVERVIEW

1

This report is the result of a community-based effort to document and describe the K-12 architecture and design education opportunity landscape in Chicago. The report aims to answer basic questions: Who offers programs? How many opportunities are available? When and where are programs offered? What are the eligibility requirements? What are the goals of these programs? The report also aims to better understand the robustness of the pre-collegiate architecture and design education ecosystem overall: Are programs providing progressive and sequential learning opportunities over time? How are organizations and programs supported? What is the role of volunteers? How sustainable are programs?

To be in the landscape study, programs needed to meet the following criteria:

- Meet outside of school time (weekends, afternoons and evenings, summer, school holidays)
- Serve youth in grades K-12
- Serve Chicago Public School students, though not necessarily exclusively
- Run between July 1, 2017 and June 30, 2018

The study analyzes patterns across two data sets. Data Set 1: The Community Survey, gathered information via a survey that targeted K-12 architecture and design education organizations. The survey collected information about program accessibility; eligibility and sustainability as well as data parallel to what is available in the Chicago City of Learning Data Portal. Data Set 2: Chicago City of Learning Data, consists of information about programs offered by city agencies and youth-serving organizations.

## BACKGROUND AND CONTEXT

■ *One need only take a casual look at this audience to see that we have a long way to go in this field of integration of the architects.*<sup>1</sup>

— DR. WHITNEY YOUNG, KEYNOTE ADDRESS, AMERICAN INSTITUTE OF ARCHITECTS NATIONAL CONVENTION, 1968

In 1968 Dr. Whitney Young issued a clarion call to the American Institute of Architects (AIA): appreciate the profound lack of diversity in the profession and the implications this has on the design of the built environment and the experience people of color have in places and spaces built for them.

Fifty years hence, association self-assessments by AIA, the National Council of Architectural Registration Boards (NCARB), and San Francisco's Equity by Design, reveal a failure to integrate women and minorities across all categories of degree and career attainment.<sup>2</sup>

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<sup>1</sup> Dr. Whitney Young's speech is available at: [http://aiad8.prod.acquia-sites.com/sites/default/files/2018-04/WhitneyYoungJr\\_1968AIAContention\\_FullSpeech.pdf](http://aiad8.prod.acquia-sites.com/sites/default/files/2018-04/WhitneyYoungJr_1968AIAContention_FullSpeech.pdf)

<sup>2</sup> NCARB Diversity Report 2018, <https://www.ncarb.org/nbtn2018/demographics>; AIA Diversity in the Profession report 2015, <https://www.architecturalrecord.com/ext/resources/news/2016/03-Mar/AIA-Diversity-Survey/AIA-Diversity-Architecture-Survey-02.pdf>; AIA Equity by Design survey 2016, <http://eqxdesign.com/survey-2016>; see also [https://www.architectmagazine.com/practice/report-the-aia-explores-perceptions-of-equity-in-architecture\\_o](https://www.architectmagazine.com/practice/report-the-aia-explores-perceptions-of-equity-in-architecture_o)

A diversity study conducted by AIA in 2015 acknowledged, “We are a profession in need of some re-design...”

- Women and minorities are under-represented in the profession...
- Women and minorities say they are less likely to be promoted or compensated at rates equal to their peers...
- Minorities reported that their barriers to entering the profession included fewer education financing opportunities; a perceived low 'return' on the expense of schooling; a lack of role models; and low awareness of the career path.”<sup>3</sup>

The bureau of labor statistics data for 2016 showed that of nearly 900,000 designers, 54% were women, 5% were African American, 11% were Latino, and 8% were Asian American.<sup>4</sup>

The 2016 Equity in Architecture survey conducted by AIA San Francisco’s Equity by Design (EQxD) called attention to “an underrepresentation of women and minorities in leadership roles and a clear gender pay gap regardless of one’s experience and title.”<sup>5</sup> According to a 2017 Dezeen analysis of data from World Architecture 100, only three of the world’s 100 biggest architecture firms were headed by women and only two had management teams that were more than 50 per cent female. Furthermore, the “percentage of women decrease[d] steadily at each ascending tier of management.”<sup>6</sup>

Barriers to entry for minorities and women occur early in education and serve as significant “pinch points” to progress along a career pathway. Common and well-documented obstacles include insufficient knowledge of a career path, lack of the kinds of financial and academic support needed to enable matriculation (and completion) of degree-generating programs in college, and a lack of role models and mentors.

In response to the 2015 Diversity Study, AIA made a set of 11 recommendations for activities to increase diversity, including Recommendation Number Nine, which calls for investment in K-12 education:

■ *Building a more equitable, diverse, and inclusive architecture workforce needs to start early. We must engage children and their families with more exposure to the profession through K–12 programs within all demographic communities. The Commission endorses the work of the AIA 2016 K–12 Task Force, and recommends that it includes EDI considerations in developing new curricula, and in its plan to enlist architects to volunteer in communities.*<sup>7</sup>

<sup>3</sup> AIA Equity, diversity and inclusion commission, executive summary, 2017, page 7: <http://aiad8.prod.acquia-sites.com/sites/default/files/2017-01/Diversity-EquityDiversityInclusionCommission-FINAL.pdf>

<sup>4</sup> AIGA Diversity and Inclusion Impact Overview 2017: <https://www.aiga.org/globalassets/aiga/content/tools-and-resources/diversity-and-inclusion/di-impact-report-2017-nov13-web.pdf>

<sup>5</sup> Architect Magazine 2016: [https://www.architectmagazine.com/practice/equity-by-design-releases-early-findings-from-its-2016-equity-in-architecture-survey\\_o](https://www.architectmagazine.com/practice/equity-by-design-releases-early-findings-from-its-2016-equity-in-architecture-survey_o)

<sup>6</sup> Dezeen 2017: <https://www.dezeen.com/2017/11/16/survey-leading-architecture-firms-reveals-shocking-lack-gender-diversity-senior-levels/>

<sup>7</sup> AIA 2017 report (see note 3), page 6.

Professional associations including NCARB and American Institute of Graphic Arts (AIGA) similarly call on members to address the lack of diversity before college and identify strategies such as increasing scholarship opportunities, investing in community outreach, and building a diverse teaching force of minority professors in accredited programs. Other recommendations include:

- “Increase industry outreach to K–12 students of color through school curricula, extracurricular clubs and activities, weekend summer programs, etc.
- Increase community outreach into middle and high schools by university architectural programs to reach girls.
- Increase industry outreach to K–12 girls through school curricula, extracurricular clubs and activities, weekend, summer programs, etc.”<sup>8</sup>

The fields of youth development and career and technical education have well documented the value of summer and after school programs to provide young people the time and flexibility to explore interests, develop skills and build the collaborative and communication experience that employers value. School is understood as necessary but insufficient for providing “competency-based learning, hands-on Science, Technology, Engineering and Math, mentorships, site-visits and apprenticeships” that ensure young people need to explore and pursue disciplines such as architecture and design.<sup>9</sup>

In Chicago, the great American “City of Architecture,” what is the state of pre-collegiate architecture and design educational opportunities? Given the demographics of the profession, and the relevance of architecture to Chicago’s tourism and industry opportunities, Chicago’s pre-professional landscape of educational opportunities is acutely relevant.

## **CHICAGO’S FORMAL ARCHITECTURE AND DESIGN EDUCATION LANDSCAPE**

Formal pre-collegiate architecture opportunities in Chicago Public Schools (CPS) have been winnowing in the past decade. During the 2017-2018 school year CPS offered a career and technical education (CTE) track for Architecture in just 5 of 176 high schools: ACE Tech Charter High School, Curie Metropolitan High School, Dunbar Vocational Career Academy, Benito Juarez Community Academy and Thomas Kelly High School. That number reduced to four in 2018/2019 with the closure of ACE Tech. The CTE architecture curriculum provides basic principles of architecture, including training in technology used to design buildings and complete architectural layouts and drawings.

The Architecture Programs at the City Colleges of Chicago lead to a Basic Certificate (BC) in Architectural Digital Media, a Basic Certificate (BC) in Architecture and an Associate in Applied Science (AAS) in Architecture. Harold Washington College and Wilbur Wright College offer these programs. Students who complete their programs of study may seek employment directly or may transfer to a senior institution where they complete a bachelor’s degree.

<sup>8</sup> AIA Diversity in the Profession of Architecture 2016, page 18, <http://aiad8.prod.acquia-sites.com/sites/default/files/2016-05/Diversity-DiversityinArchitecture.pdf>

<sup>9</sup> Gabrielle Lyon, Chicago STEM Pathways, State of STEM in Out-of-School Time in Chicago report, 2013. [https://chicagostempathways.org/wp-content/uploads/2013/06/stemost-report\\_fnl\\_0606131.pdf](https://chicagostempathways.org/wp-content/uploads/2013/06/stemost-report_fnl_0606131.pdf); Afterschool Alliance, This Is Afterschool fact sheet 2018, [http://afterschoolalliance.org/documents/factsResearch/This\\_Is\\_Afterschool\\_2018.pdf](http://afterschoolalliance.org/documents/factsResearch/This_Is_Afterschool_2018.pdf)

Four area schools offer bachelor's, master's and doctoral degrees in architecture. Illinois Institute of Technology, a private school, offers a five-year Bachelor of Architecture (BArch) as well as a Masters in Architecture (MArch), a Masters in Landscape Architecture (MLA), a Masters of Science in Architecture (MSArch) and the only architecture PhD program in Chicago. The School of the Art Institute of Chicago, a four-year private art school, offers a BFA in Interior Architecture and Master of Architecture. The University of Illinois at Chicago, a public research institution, offers pre-professional bachelor degrees in Architecture as well as the Master of Architecture, Master of Science in Architecture, and Master of Arts in Design Criticism. Judson University, a four-year private school, outside the city, offers a Bachelor of Arts in Architecture and a Master of Architecture.

## **ABOUT THE CHICAGO ARCHITECTURE EDUCATION NETWORK**

The Chicago Architecture Education Network (CAEN) is comprised of a diverse set of cross-sector stakeholders with vested interest in the Pre-K through 12th grade architecture and design education ecosystem. Participants represent formal and informal education organizations, nonprofit and cultural organizations, architecture and design firms as well as architecture and design professional associations, and colleges and universities.

The network was initially convened by AIA Chicago and the Chicago Architecture Center in September 2017 at AIA Chicago offices during a breakfast meeting chaired by Catherine Baker (then President-Elect of the Chicago chapter of the AIA) and Gabrielle Lyon (then Vice President of Education and Experience at the Chicago Architecture Center).

Participants gathered to discuss the goals for a network dedicated to actively engaging diverse students at all levels of education. The hope was to align efforts in ways that could develop students' skill base and make opportunities more transparent and accessible in order to increase access, diversity and equity.

After a series of goal-setting conversations, the network defined three:

1. Create transparent access for K-12 youth into architecture and design, with the ultimate goal of increasing diversity in the profession.
2. Centralize information about programs and make opportunities in a career pathway more "transparent," and
3. Build the capacity of individuals and organizations to offer high-quality experiences.

The network meets every other month with a standing agenda structure that includes a presentation, status reports from working groups, and time for members to share upcoming events or requests for collaboration and assistance.

In Winter 2018, CAEN undertook the development of a landscape study to document the landscape of in and out of school program opportunities in architecture, design, engineering and construction for pre-K through 12th grade students in the Chicagoland area. The initiative was launched to enable the network to benchmark, ideate, and implement new ways to create transparent pathways for Chicago's youth into architecture and design professions and to collaborate as a community.



## ABOUT THE LANDSCAPE SURVEY AND THE DATA IN THIS REPORT

This report is an effort to identify existing out of school programs and also to understand the robustness and resilience of offerings as an ecosystem. Are programs dependable? That is, will they be offered year after year? How do programs align with formal education offerings? How sustainable are the programs? How are they funded and staffed? What does the landscape look like overall? Are pathways possible or are there gaps/missing links that make continuity challenging or even impossible?

### DATA SET 1: COMMUNITY SURVEY DATA

The Community Survey Data Set (data set 1) is comprised of 35 program records run by 17 organizations identified through the distribution of a CAEN-created survey. Survey questions referred to the program period of July 1, 2017 through June 30, 2018. Survey questions investigated: Basic information (contact information, program location); Content and goals; Program operations (when, where and how the program is offered); Participant Characteristics - target audience, eligibility, participation; Capacity - stability of existing programming, and ability expand programming; Program administration - funding, duration of program.

The survey was administered between June 2018 and August 2018. Participants were given the option to complete the survey online or by phone with assistance from a Chicago Architecture Center staff member. Survey participants were provided the option a \$5 gift card to Starbucks upon completion of the survey.

### DATA SET 2: CHICAGO CITY OF LEARNING DATA

The Chicago City of Learning data (data set 2) is an export of Chicago City of Learning programs that were categorized as "Design and Making" that occurred during the period of July 1, 2017 through June 30, 2018 and contains 159 program records.<sup>10</sup>

Chicago City of Learning (CCOL) is a city-wide initiative designed to help connect youth to interest-based out-of-school learning opportunities. CCOL partners provide programs for youth outside of school publish their program data using an online platform. CCOL Program entry fields include a description of the program, program contact and registration information, program location, target age range, program category (up to 2 can be chosen from 11 categories), dates provided, and cost.

### DATA SET 3: COMBINED DATA

The combined dataset includes unique records from both the Community Survey data (data set 1) and the CCOL data (data set 2). The combined data (data set 3) contains 152 programs provided by 31 organizations. Effort was made to remove duplicate programs that appeared in both datasets. Multiple drop-in events run by a single organization in a single location were synthesized as a single program instance for both the CCOL data and Community Survey data in data set 3.

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<sup>10</sup> Unlike the Community Survey data, multiple locations and events are frequently represented by their own row. Each instance of a "drop-in" program is counted as an individual "program" in the CCOL program record data. For example, there are 9 records for Chicago Public Library's drop-in program "LEGO Super Stars" which occurred weekly in July and August 2017.

# CHAPTER 2: COMBINED DATA RESULTS

The following findings refer to data from the data set 3, the combined data sets of the Chicago City of Learning and the CAEN-administered Community Survey data.<sup>11</sup>

## **TOTAL NUMBER OF PROGRAMS**

31 organizations provided 152 architecture and design education programs between July 1, 2017 and June 30, 2018. The majority of programs (127) are offered by nonprofit organizations. Two nonprofits provided the preponderance of programs in this category: The Chicago Architecture Center and After School Matters. It is important to note that although After School Matters is counted as a single organization, in actuality it is an umbrella entity that subsidizes other organizations' programs. Data inconsistencies made it impossible to identify each discrete organization under the After School Matters umbrella.

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<sup>11</sup> A note about data categories and descriptions: Due to the lack of a formal framework for identifying, describing or tracking programs, the authors of this report needed to create some definitions and suggest frameworks in order to make sense of the data at hand. Some of these include categories such as program types, program intensity, program goals, and adults involved. Authors acknowledge these are imperfect categories, but hope they offer a beginning effort for understanding the landscape.

## OFFERINGS BY ORGANIZATION TYPE

Four types of organizations are running programs. *Nonprofit organizations*, which includes cultural organizations such as the Art Institute of Chicago and ACE Mentor; *governmental agencies*, which consists primarily of Chicago Public Library programming; *colleges* offering programs for K-12 students; and professional architecture and design *firms*.

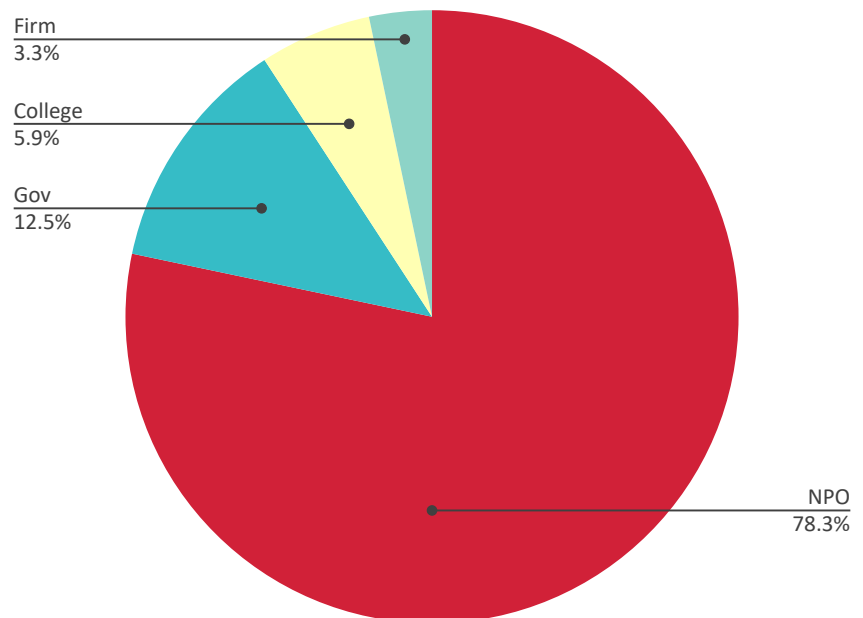
More than three-quarters of programs are offered by nonprofit organizations. A further 12.5% are offered by government entities.

**FIG. 1:** TABLE OF OPPORTUNITIES BY ORGANIZATION TYPE

ORGANIZATION TYPE	ORGANIZATIONS (%)	OPPORTUNITIES (%)
Nonprofit organization (NPO)	20 (64.5%)	119 (78.3%)
Government	2 (6.5%)	19 (12.5%)
College	8 (25.8%)	9 (5.9%)
ACED firm	2 (6.5%)	5 (3.3%)
<b>Total</b>	<b>31</b>	<b>152</b>

Source: data set.

**FIG. 2:** CHART OF OPPORTUNITIES BY ORGANIZATION TYPE



## OFFERINGS BY OPPORTUNITY TYPE

Programs have been categorized into four “types:” *drop-in* (single-session programs without a specific sequence or prerequisite); *courses/classes/camps* (multi-session opportunities with a defined program sequence and structure); *festivals*; and “*other*” (online platforms that offer activities and/or host digital competitions).

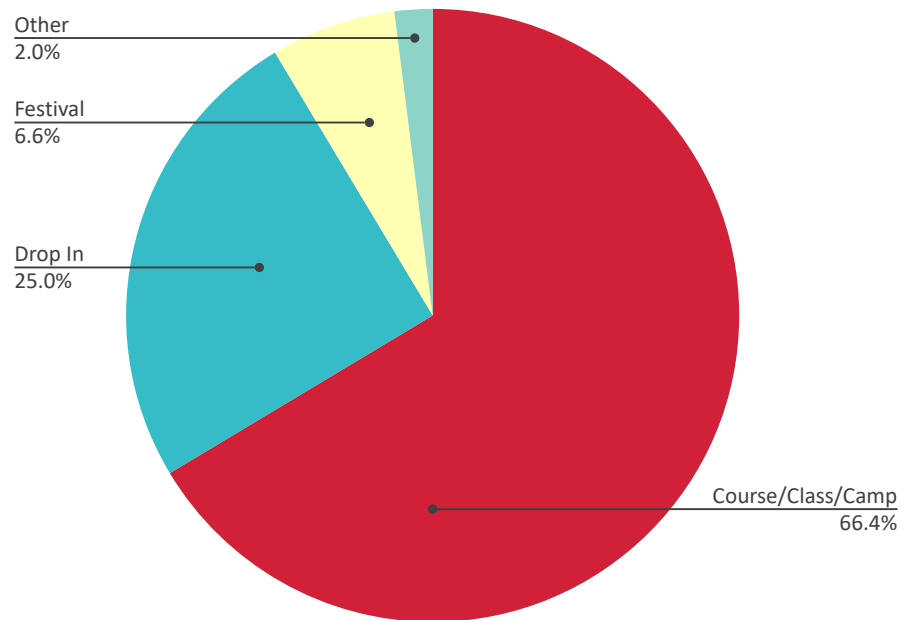
Approximately two-thirds of architecture and design opportunities (66.4%) fall into the Course/Class/Camp category, followed by “drop-in” programs (25.0%).

**FIG. 3:** TABLE OF OPPORTUNITIES BY PROGRAM TYPE

PROGRAM TYPE	OPPORTUNITIES (%)	COLUMN (%)
Course/Class/Camp	101	66.4%
Drop-in	38	25.0%
Festival	10	6.6%
Other	3	2.0%
<b>Total</b>	<b>152</b>	<b>100%</b>

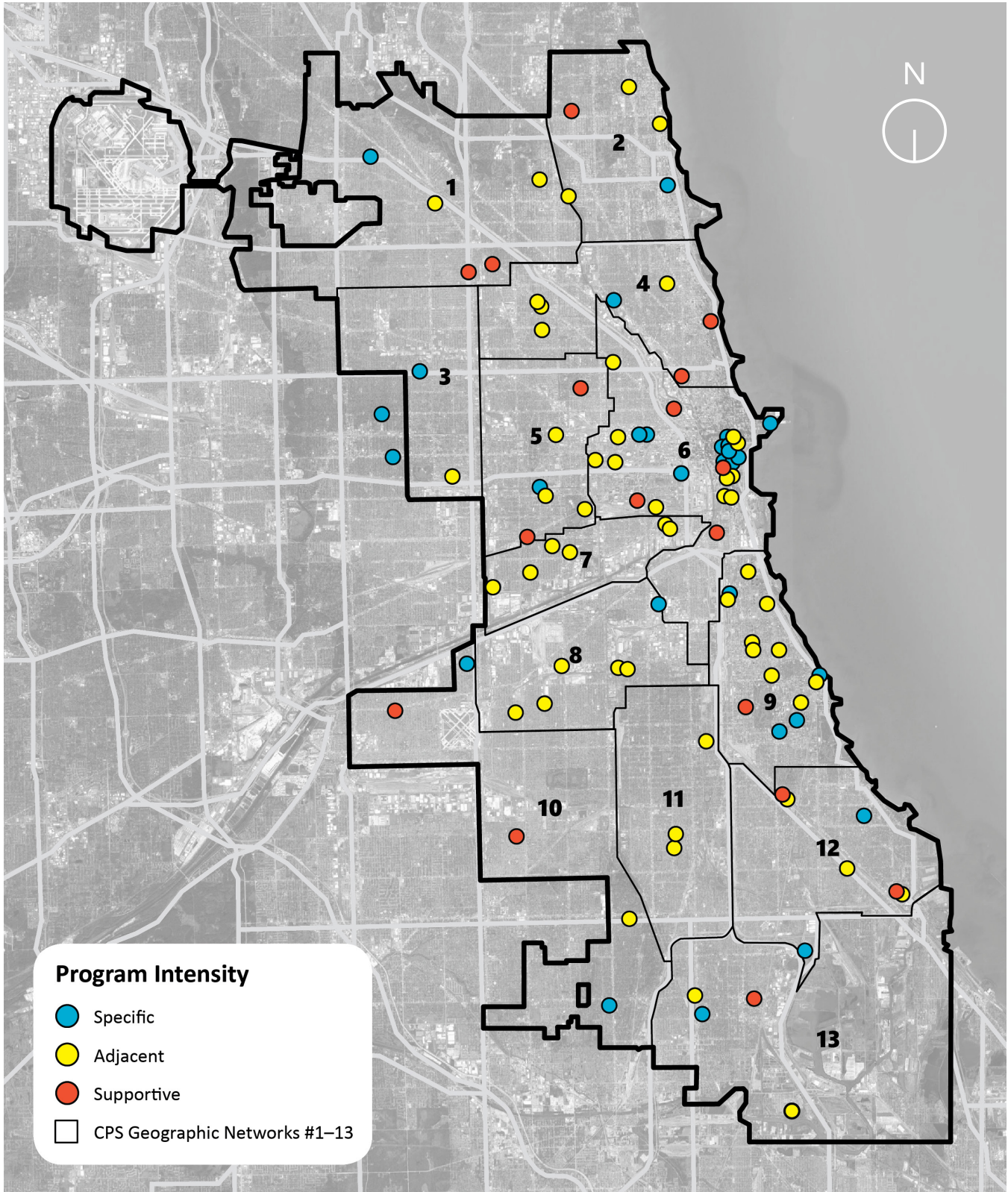
Source: data set 3.

**FIG. 4:** CHART OF OPPORTUNITIES BY PROGRAM TYPE



**FIG. 5: MAP OF PROGRAM DISTRIBUTION**

This map identifies all programs, color coded by program type.



## GRADE RANGE DISTRIBUTION

To compare ages and grades served across the 152 programs, age band categories have been created. They are defined as Early Childhood (birth to age 5); Elementary (ages 5-11); Middle School (ages 11-14); and High School (ages 14-19). The largest number of programs target high school students (see figure 6). More than one-third of programs target multiple age groups.

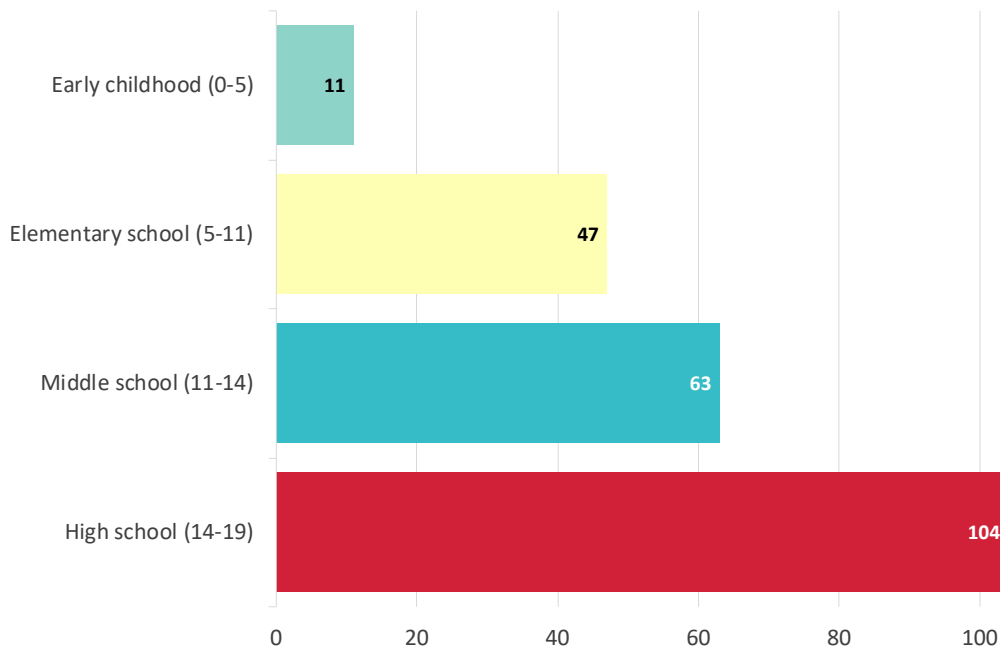
**FIG. 6:** TABLE SHOWING OPPORTUNITIES AVAILABLE TO EACH AGE GROUP

AGE GROUP	OPPORTUNITIES AVAILABLE*	% OF THE 152 OPPORTUNITIES
Early childhood (0-5)	11	7.2%
Elementary school (5-11)	47	30.9%
Middle school (11-14)	63	41.4%
High school (14-19)	104	68.4%
<b>Total</b>	<b>152</b>	<b>100%</b>

\*The number of opportunities available sums to more than 152 since some opportunities target multiple age groups.

Source: data set 3.

**FIG. 7:** CHART OF OPPORTUNITIES AVAILABLE BY AGE GROUP



## OPPORTUNITIES BY OPPORTUNITY TYPE AND AGE GROUP

Comparing the four program types with the age groups shows a very clear trend: as students get older, a higher proportion of the opportunities available to them are courses/classes/camps. Correspondingly, younger students have a higher proportion of drop-in opportunities available to them.

**FIG. 8:** CHART OF OPPORTUNITIES AVAILABLE BY AGE GROUP AND PROGRAM TYPE

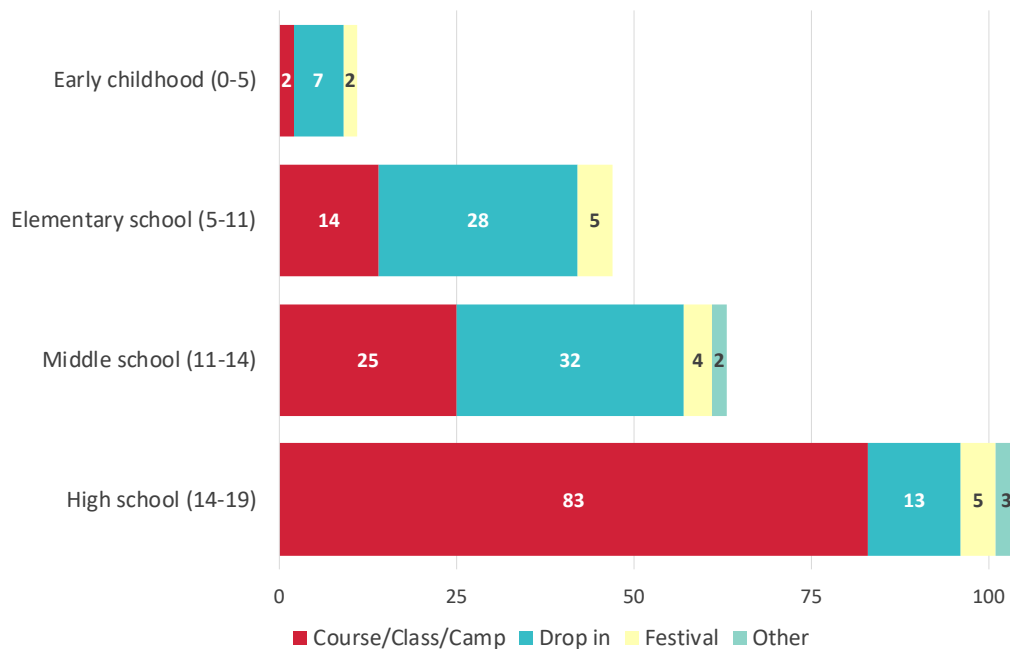
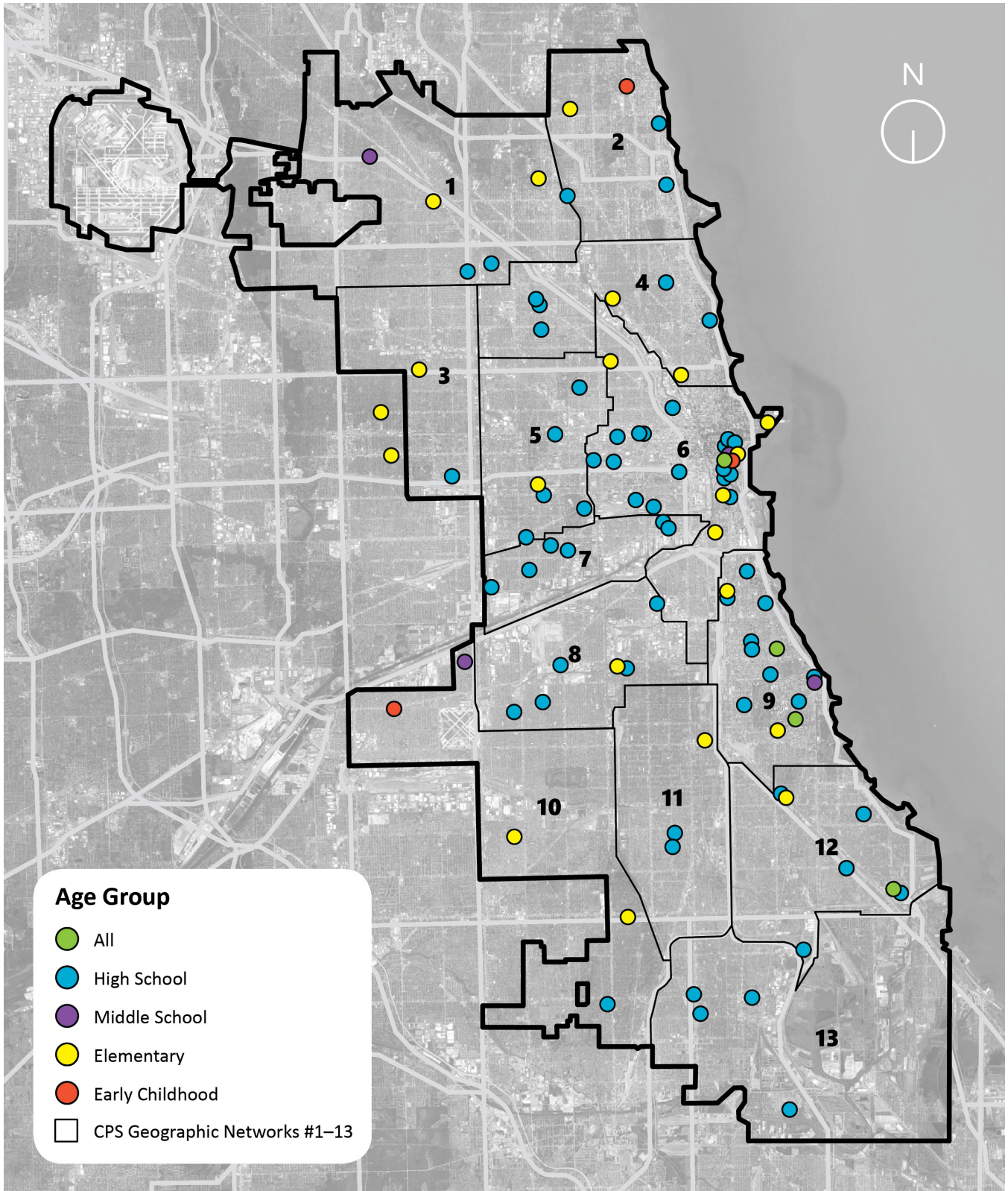


FIG. 9: MAP OF PROGRAMS COLOR-CODED BY AGE CATEGORIES





**OPPORTUNITIES BY TIME OF YEAR**

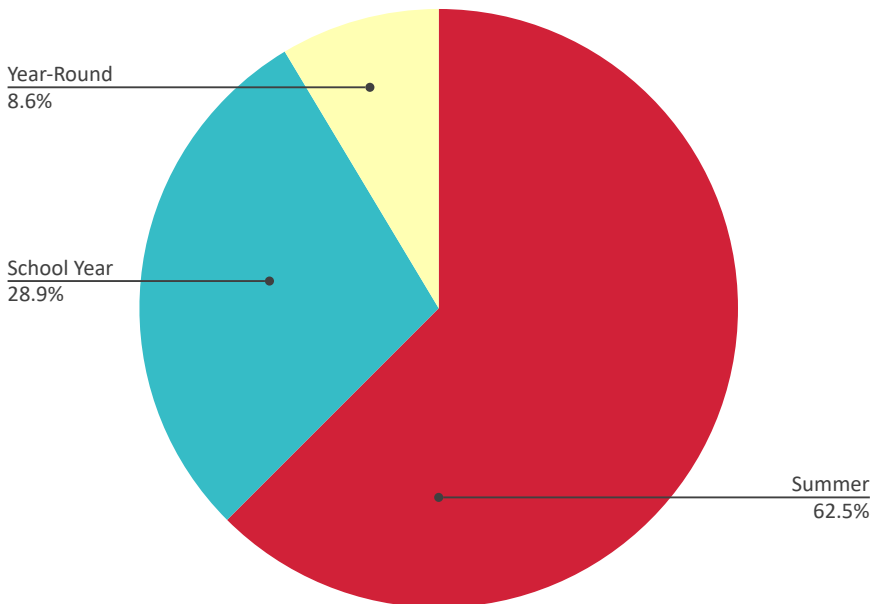
During the summer, 108 programs (71.1%) are on offer. During the school year, 57 programs (36.1%) are on offer. These figures include 13 programs that are offered year-round.

**FIG. 10:** TABLE OF OPPORTUNITIES AND THE TIME OF YEAR THEY ARE OFFERED

TIME OF YEAR	OPPORTUNITIES	COLUMN %
Summer	95	62.5%
School Year	44	28.9%
Year-Round	13	8.6%
<b>Total</b>	<b>152</b>	<b>100%</b>

Source: data set 3.

**FIG. 11:** CHART OF OPPORTUNITIES BY TIME OF YEAR



## OPPORTUNITIES BY PROGRAM INTENSITY

For the purpose of this report, and to better understand the complexity of the ecosystem, an attempt was made to create a framework for the *nature* of program offerings. This category is called “program intensity.”

- **Specific** programs denote programs that explicitly provide architecture and design education experiences and build skills that are related to pursuit of college and career experience in architecture and design professions.
- **Adjacent** programs are programs that are closely related to architecture and design programs—including urban planning, placemaking—and programs which include explicit use of the design process or call on participants to solve a design challenge or problem.
- **Supportive** programs provide an opportunity to develop skills that are useful for architecture and design professions, such as model making, building and construction with diverse media and sketching from observation. Programs that purely focused on fine art development were not included in the study.

FIG. 12: TABLE OF OPPORTUNITIES BY PROGRAM INTENSITY

PROGRAM INTENSITY	OPPORTUNITIES	COLUMN %
Specific	60	39.5%
Adjacent	63	41.4%
Supportive	29	19.1%
<b>Total</b>	<b>152</b>	<b>100%</b>

Source: data set 3.

FIG. 13: CHART OF OPPORTUNITIES BY PROGRAM INTENSITY

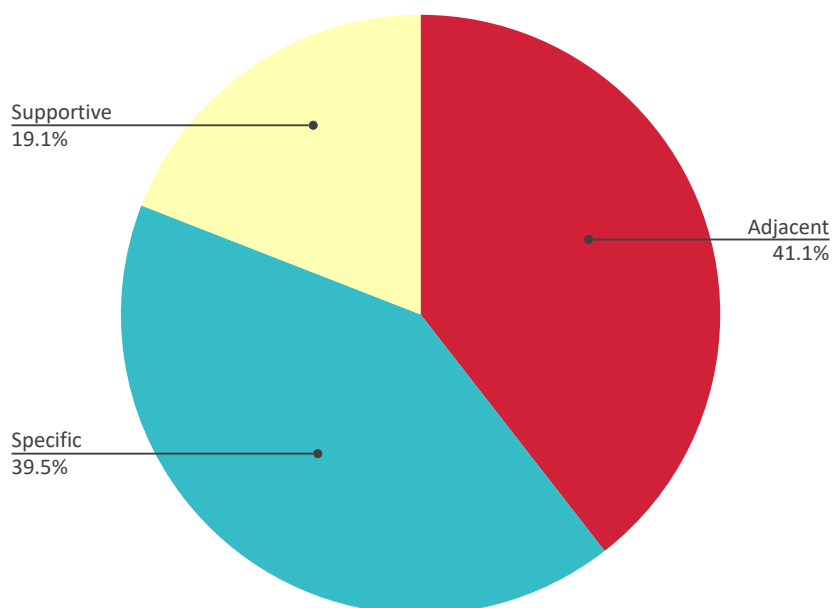
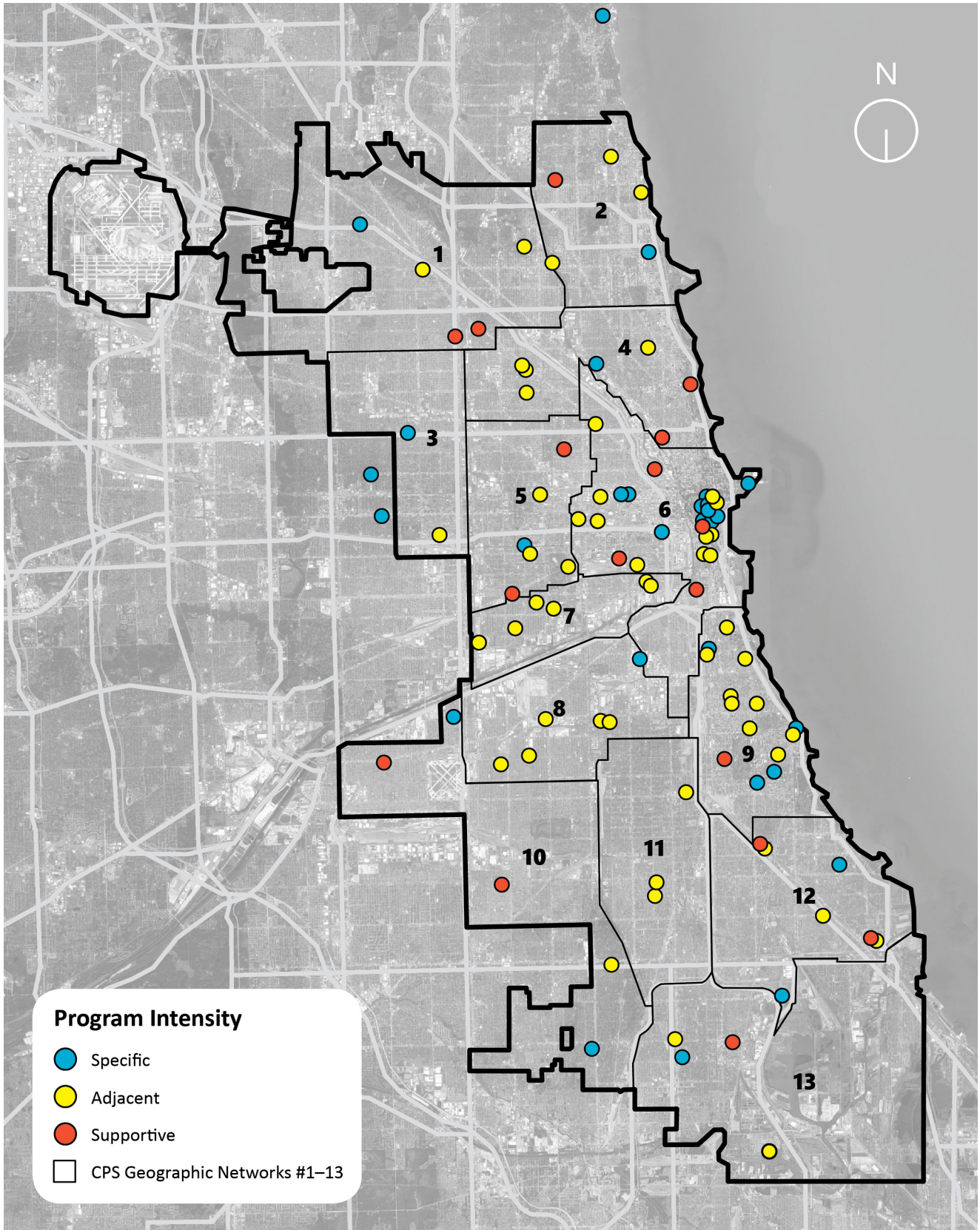


FIG. 14: MAP OF PROGRAMS COLOR CODED BY PROGRAM INTENSITY



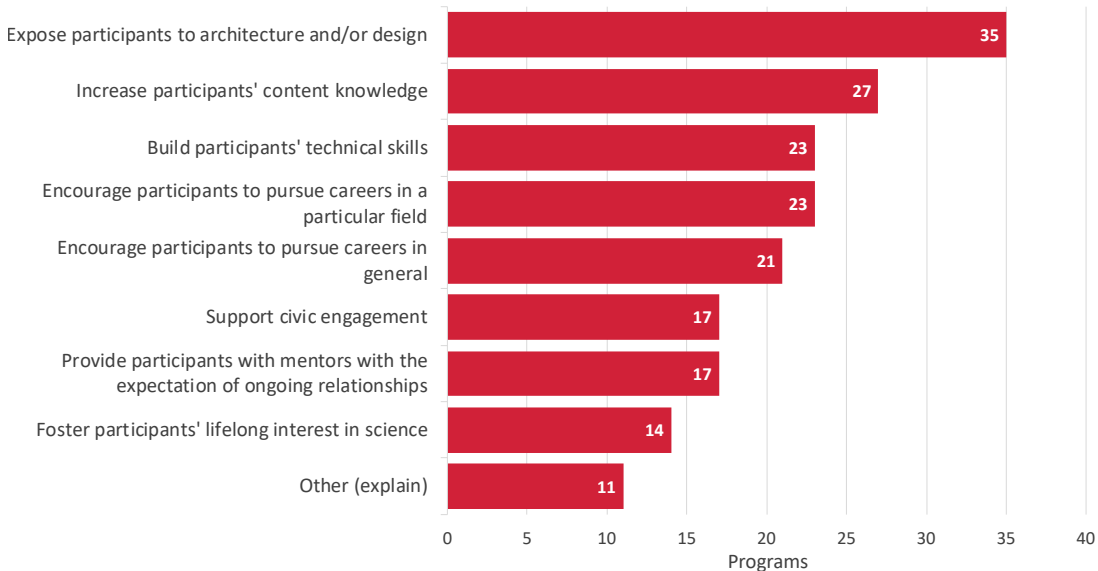
# CHAPTER 3: COMMUNITY SURVEY RESULTS

The following findings refer to data from the survey data set, data set one. As described above, the Community Survey Data Set consists of 35 program records run by 17 organizations identified through the distribution of a CAEN-created survey. Survey questions extended beyond basic program information and program availability to investigate program content, participant characteristics and also organizational capacity and program administration.

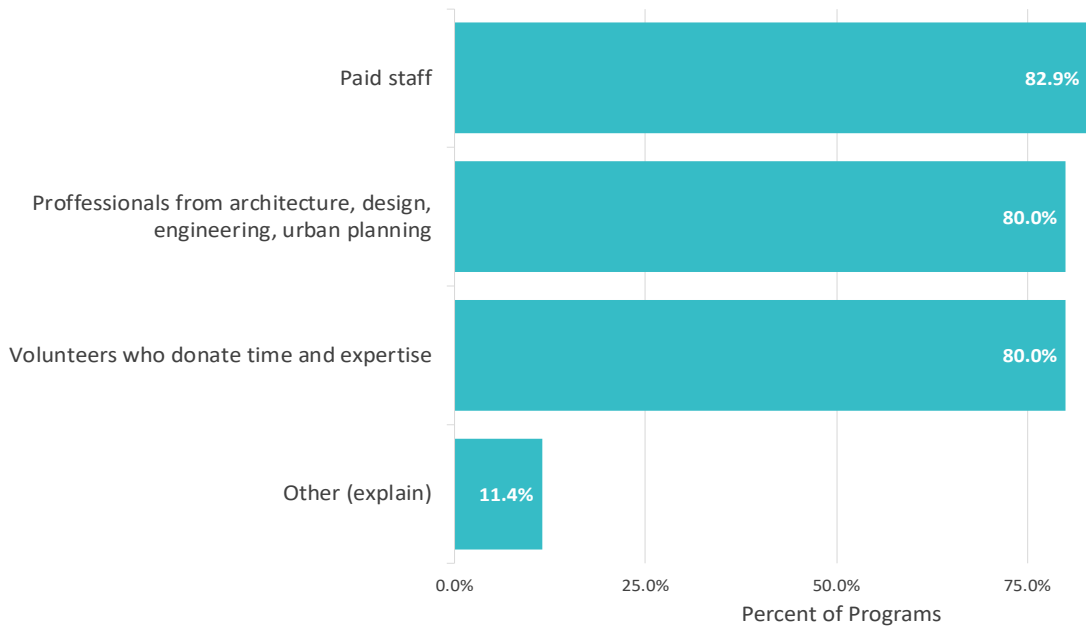
## PROGRAM GOALS

Program goals are diverse across offerings. Many programs describe more than one goal. Often programs are designed to develop professional and technical skills, as well as social-emotional skills.

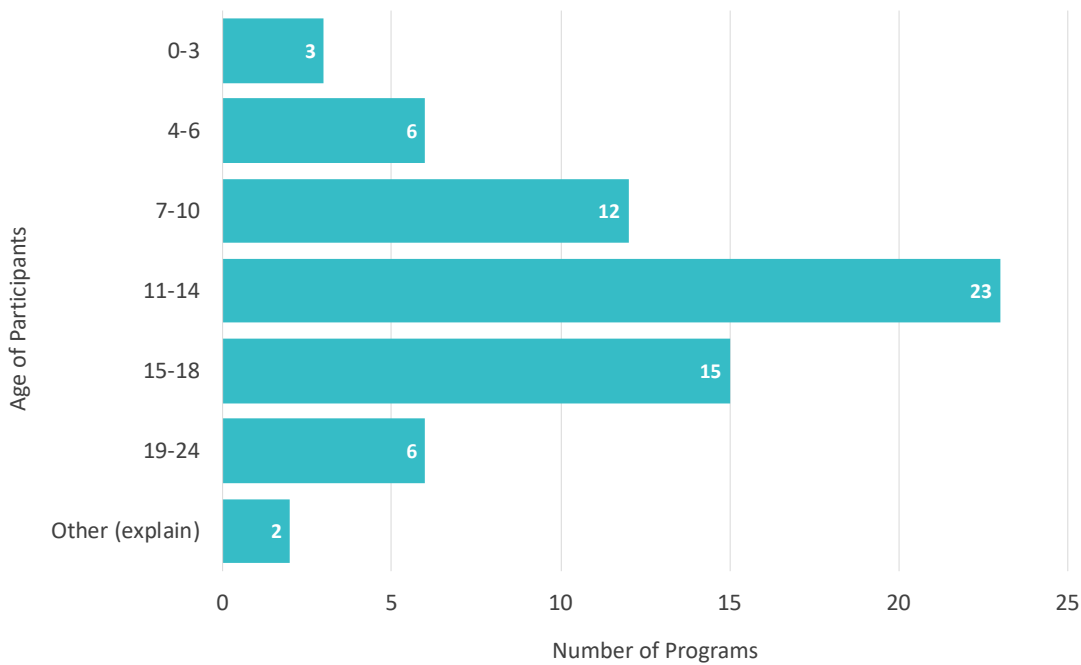
**FIG. 15: CHART OF GOALS AND COUNT OF PROGRAMS FOR EACH GOAL**



**FIG. 16: CHART OF ADULTS INVOLVED IN OFFERING PROGRAMS**



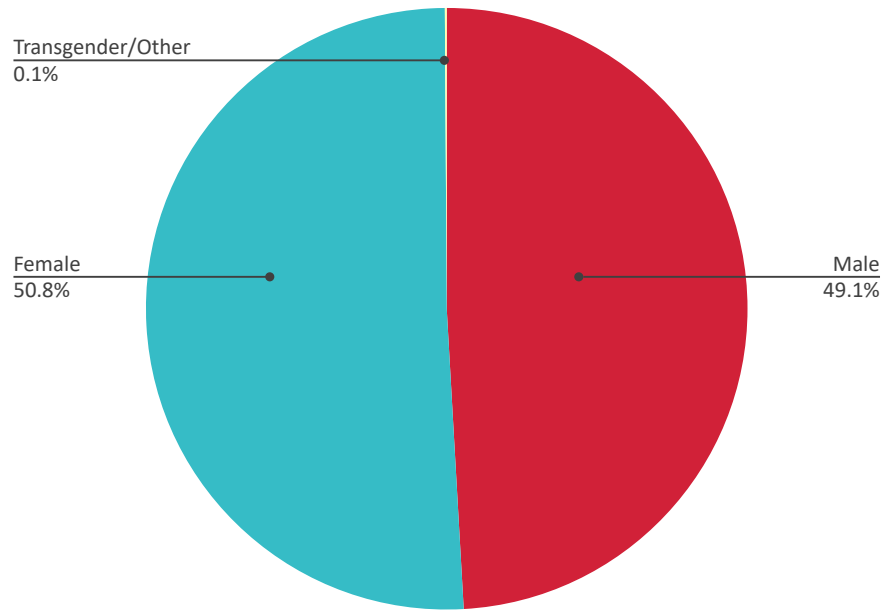
**FIG. 17: CHART OF THE AGE OF PROGRAM PARTICIPANTS**



### PARTICIPANT DEMOGRAPHICS: GENDER

Program data suggests males and females are equally represented across program categories. It is important to note that gender identity is estimated by program directors rather than specific data inputted by participants themselves. A select portfolio of classes, offered by the Chicago Architecture Center, is designed for girls only; without this data set the male/female ratio in this query might have been less equal.

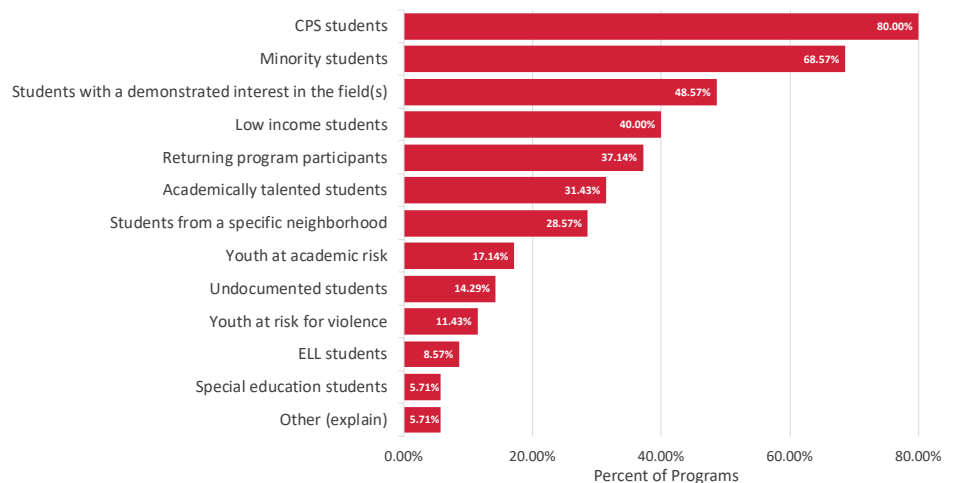
**FIG. 18: GENDER OF PROGRAM PARTICIPANTS**



### TARGET AUDIENCE

Survey participants were given the option to choose “as many as apply” from a set of target audience options. Fewer programs target students who are vulnerable due to academic status, legal status, or risk of violence than programs which target students who are academically talented, identify an existing interest in the fields or are returning program participants.

**FIG. 19: CHART OF TARGET AUDIENCES FOR PROGRAMS**



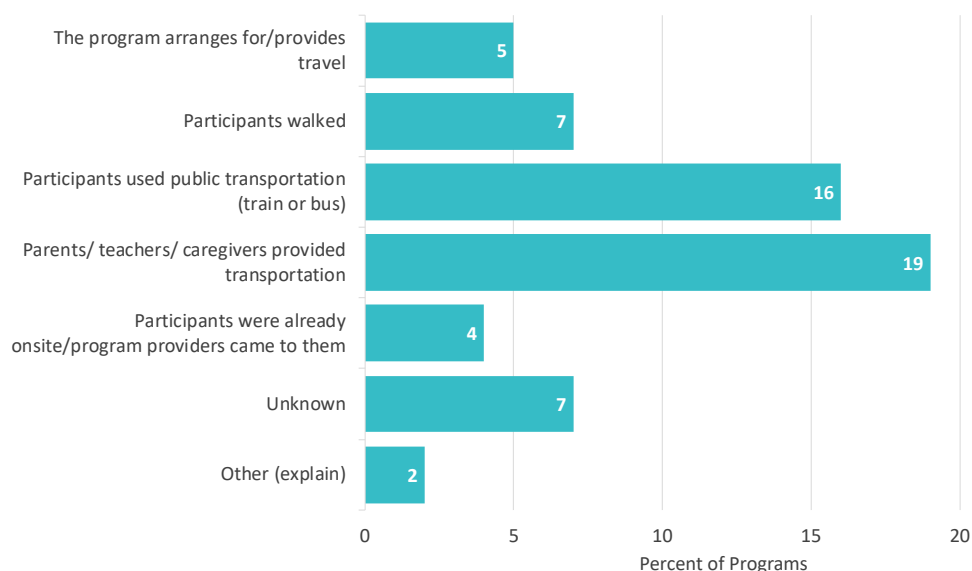
## ELIGIBILITY REQUIREMENTS

Exactly half of the programs in the data set have eligibility requirements. These may include one or more of the following: enrolled in a Chicago Public School, complete an application, residency in a specific neighborhood, demonstrated interest, or be a minority or a girl. The other half of programs did not list eligibility requirements.

## TRAVEL CONSIDERATIONS

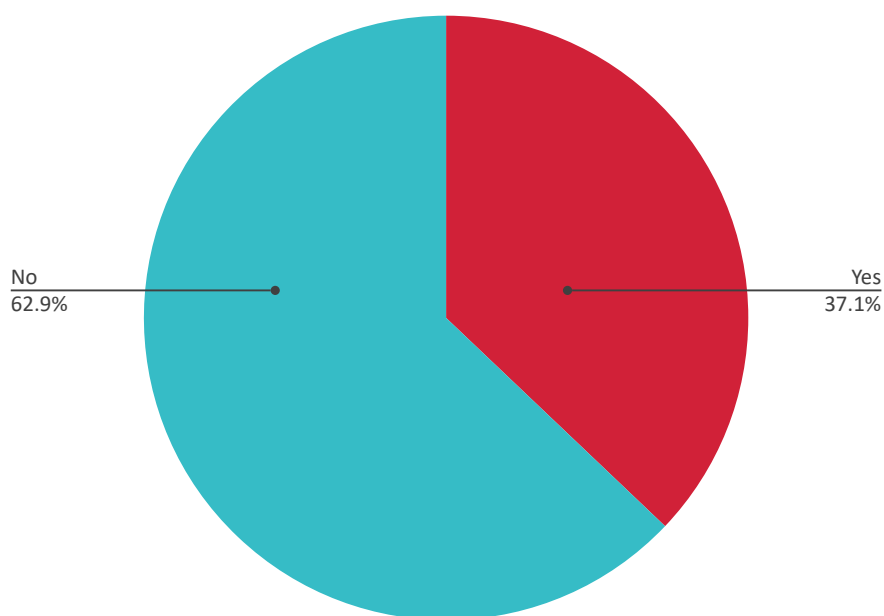
The vast majority of student participants are traveling to participate in programs. Travel considerations vary significantly by age of participant; very young children can only travel with the assistance of an adult. Many high school age children are expected to travel on their own, often by public transportation. Travel information provided by survey participants were primarily anecdotal and not collected on a systematic basis.

**FIG. 20:**  
CHART OF  
TRAVEL  
METHODS BY  
NUMBER OF  
PROGRAMS



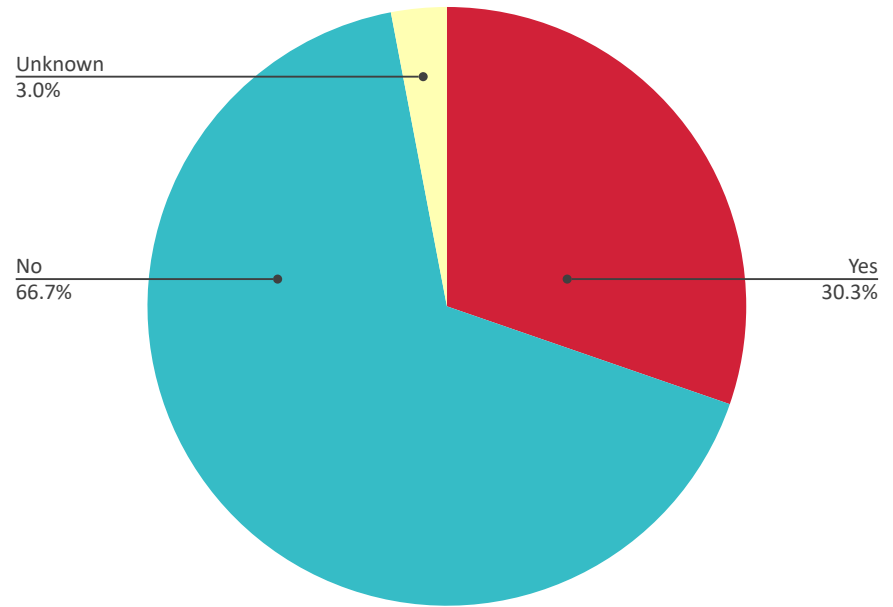
## TUITION REQUIRED

**FIG. 21:** CHART  
OF PROGRAMS  
BY TUITION  
REQUIREMENT



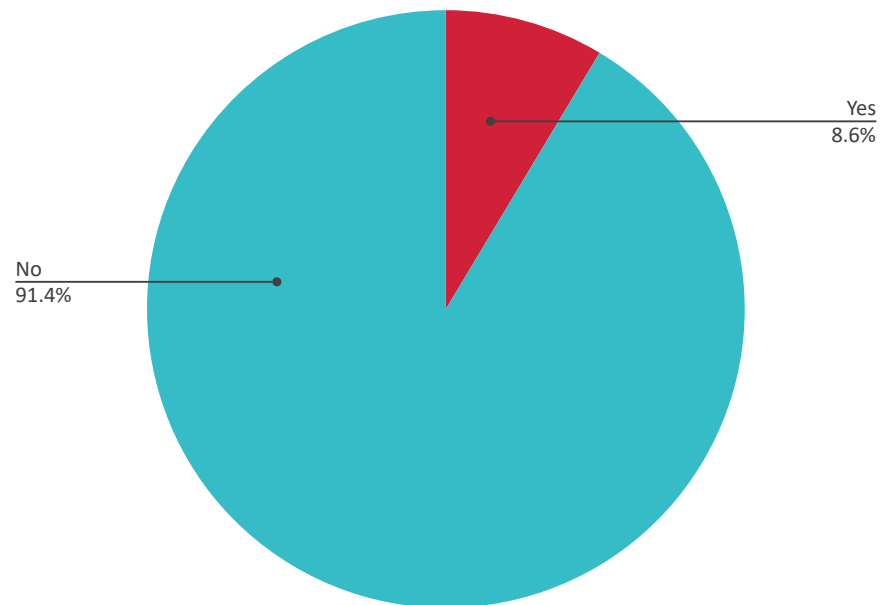
## SCHOLARSHIP AVAILABILITY

**FIG. 22:** CHART OF PROGRAMS BY SCHOLARSHIP AVAILABILITY



## PAID PARTICIPATION

Only 8.6% of surveyed programs offered payment for participation in programs. Programs paying students were exclusively high school programs, most of which were affiliated with After School Matters.



**FIG. 23:** CHART OF PROGRAMS BY PAID PARTICIPATION

## PROGRAM OPERATIONS

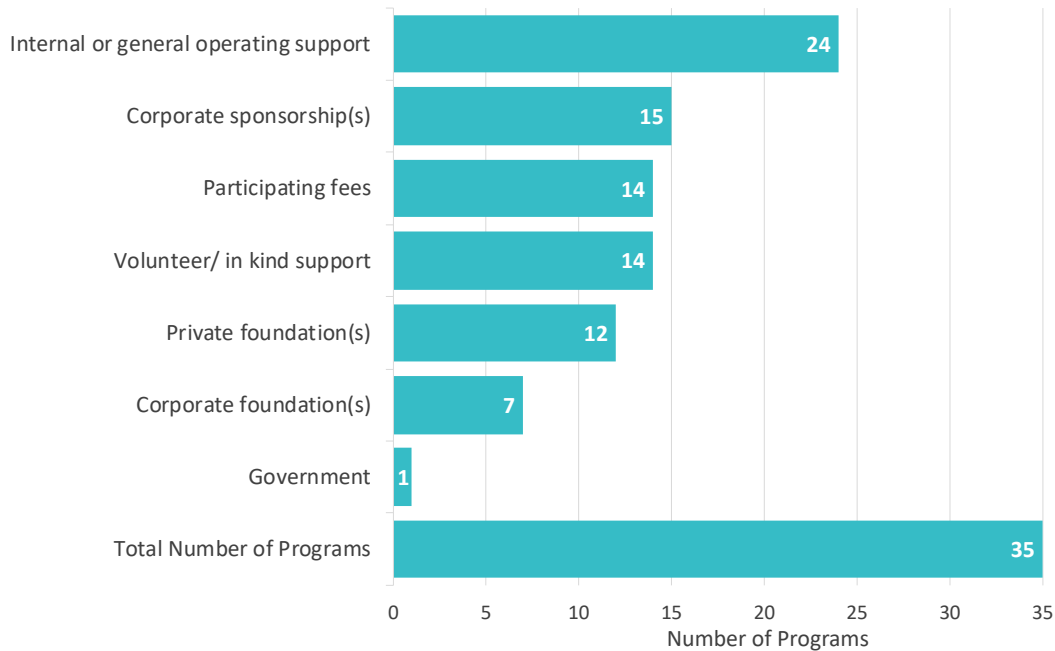
The survey attempted to assess the overall “robustness” of the ecosystem through a series of questions about program funding, staffing, planning and operations. Following the logic of Jolly and Campbell’s “Engagement, capacity and continuity” argument, continuity of programmatic opportunities is a critical factor in enabling a young person to develop the skills and social capital needed to pursue a career pathway in a field such as architecture or design. Program stability and predictability year over year are key factors in a robust ecosystem.



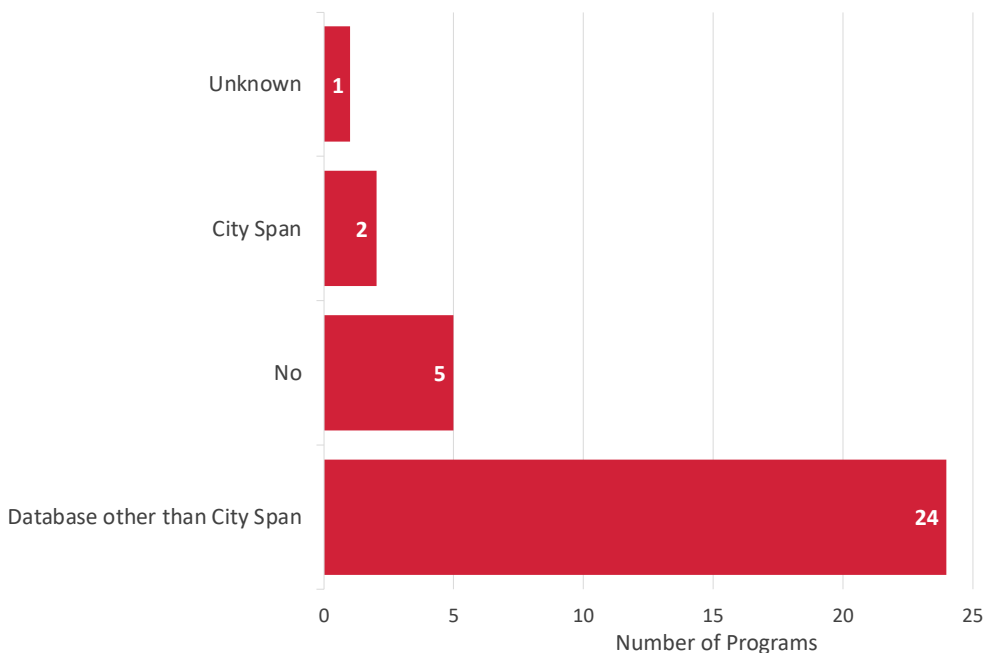
## FUNDING SOURCE

68.6% of programs relied on internal or general operating support. A third were supported by private foundation funding; slightly more than a third included participant fees to support program operations. 40.0% depend on volunteer and in-kind support. Only one program was supported with government funding.

**FIG. 24:** CHART OF FUNDING SOURCES FOR PROGRAMS



**FIG. 25:** CHART OF METHODS FOR TRACKING DATA



# CHAPTER 4: SUMMARY AND RECOMMENDATIONS

## **OBSERVATIONS: WHAT DOES THE LANDSCAPE LOOK LIKE?**

Given the current understanding of the most efficient pathway to an architecture or design career post high school graduation, are opportunities available? Is a recommended path available? What are the barriers to an efficient path? What are the gaps in programs in terms of times, locations, skill level? Who is offering what when, where - and for whom? What is the role of volunteers? How robust are programs? Is a scaffolding of skill building available in current opportunities?

Typical pathway stages in the pipeline to working as a professional.

K-5 → Middle School → High School → College → Graduate School → The Licensure Process

One sample pathway that intentionally incorporates out of school time programming from INOMA's Project Pipeline offers a model.<sup>12</sup>

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<sup>12</sup> The INOMA pathway model is available at: <https://www.i-noma.org/the-pipeline>.

**FIG. 26:**  
SUMMARY OF K-12  
ARCHITECTURE  
AND DESIGN  
EDUCATION  
LANDSCAPE



It is well documented that out-of-school time programs such as the ones described in this report support positive youth development such as career-readiness, socio-emotional skills, and leadership development.

The landscape study findings, which began with baseline questions about type, frequency and participation, quickly lead to questions relating to quality, consistency, equity and responsibility.

The questions raised by the findings in this report are not exclusive to the disciplines of architecture, design and related fields of engineering and construction. These issues are shared in many fields in which racial and ethnic minority populations, girls, and students from low socioeconomic status areas are disproportionately underrepresented in professional fields. How actionable are any of the observations? How might we act as a network collective on this data?

In the absence of structured ways for informal and formal programs to be “in touch” how are students going to learn about what is available or possible? How can the community identify entry-points to pathways? How do we make connections more explicit for youth? What are the equity gaps? What do colleges see as “lacking” in skills? Could the community help support development of those skills?

**The next generation of architects and designers in the “City of Architecture” are being recruited and prepared outside of school.** Only four public high schools in the city offer architecture coursework sequences.<sup>13</sup> This means there is a serious responsibility being borne by non-school organizations to provide the exposure, skills and role models required to enable pursuit of architecture and design post high school. This responsibility needs to be understood in the context of limited and unpredictable funding as well as the overall lack of institutional maturity of many of the entities offering programs. A new initiative developed by City Colleges of Chicago Harold Washington Campus may be an important first step in creating a robust, transparent, equitably-assessed program.<sup>14</sup>

**An ecosystem exists, but it isn't by design.** There is a **gradually increasing number of offerings available to students as they grow older** (see figure 26) and programs are fairly well-distributed around the city.

- Early childhood and elementary students have fewer opportunities available to them than their middle school and high school counterparts. The majority of programs remain on offer for high schoolers.
- **As students grow older, there are fewer drop-in programs available to them and more courses/classes/camps.**
- There is a nearly 50/50 split in terms of gender for the participants of recorded programs.
- The maps (figures 5, 9 and 14) show a **relatively even geographical distribution** across the city's wards and CPS boundaries. This is due largely to the number of programs being offered by libraries.

While 39.5% of programs in the ecosystem are *specific* (that is, designed to foster specific architecture and design skills as pre-professional efforts), the majority (60.5%) are either *adjacent* or *supportive*. These provide significant potential for raising awareness among participants (and, in some cases the adults who offer and run programs) that these opportunities serve as precursors to architecture and design skill development. Perhaps of equal importance if a young person finds themselves increasingly interested in the subject matter architecture and design opportunities could make for a good "next step" that they might not have otherwise considered.

### **Nontraditional students may be experiencing unintended barriers.**

The most specific programs (courses, classes and camps) in many cases include eligibility requirements or fees that may serve as barriers to participation for minority youth and nontraditional participants. Fewer programs target students who are vulnerable due to academic status, legal status, or risk of violence than programs which target students who are academically talented, identify an existing interest in the fields or are returning program participants.

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<sup>13</sup> The 2018-2019 school year

<sup>14</sup> An interesting new program (which emerged after the scope of this survey) is designed to take seriously the need for pre-college architecture skill development. A new Architecture Fellowship opportunity at Harold Washington College (HWC) will provide high school students the opportunity to a) take Dual Enrollment (DE) classes on a college campus and earn college credit, b) obtain a Basic Certificate in Architecture, c) gain early career exposure to the field of Architecture, and d) better understand the transformational power of Architecture as a tool to design and build more just and humanizing contexts. Students will start the fellowship program during their junior year of high school, taking one class each semester (summer, fall, spring) for a total of six classes. Additionally, in partnership with the Chicago Architecture Center, students will participate in a variety of supplemental experiences that both provide them with tangible skill sets related to architecture and spark their curiosities into the field of architecture. Students that complete the HWC Architecture Fellowship have the option to matriculate to HWC for an accelerated AAS degree as college students. This model, while emergent, would, at capacity, enroll 50 students from a starting pool of 10 Chicago Public Schools.

## RECOMMENDATIONS

The following recommendations for the architecture and design out-of-school time education community are based on the above observations and the data presented in Sections 2 and 3.

1. Create a city-wide architecture and design pathways education agenda that is focused on ensuring young people can get engaged, develop fundamental skills and continue to build skills and relationships as they progress from elementary school, through middle and high-school and into college and careers.
2. Funders and institutions should invest in an active, cross-sector network of stakeholders who collaborate over multiple years. The network should focus on building the capacity of members to contribute to the city-wide agenda, offer complementary programming, and support individual youth to move through program pathways.
3. Build a specific program portal supported by a dedicated, staffed, position. An online clearinghouse should provide up-to-date information about available programs, actively share information with teachers and mentors, and provide a calendar of events and workshops. A key aim: provide up-to-date information about available in and out of school programs that is readily available, easy to use, and broadly promoted within CPS, City Colleges, local universities and across nonprofit organizations and professional firms.
4. Enable program providers to invest in high caliber, consistent data collection, data sharing and data analysis that to help support program collaboration, increased quality and longitudinal student outcomes related to persistence. *In the absence of a well-defined, shared set of definitions of content, program goals, and outcomes, the assessment of program quality and the strengthening of youth-centered outcomes will remain a challenge. Creation of such a set of shared language and best-practices for data collection would facilitate collection and analysis of longitudinal data, program management, and analysis of meaningful youth participation.*
5. Balance the city's portfolio of offerings and reach new audiences by creating new classes/ camps for young students and new drop-in opportunities for older (especially high school) students.
6. Take the roles of volunteers seriously and ensure full-time, part-time, seasonal staff and volunteers are equipped with high quality professional development that includes an understanding of the ecosystem of offerings available to young people in architecture and design in Chicago. Equip program facilitators with knowledge and tools to connect students to other opportunities.