



DE&CO STEEL BRIDGE DESIGN COMPETITION





BÜYAP'I TANIYALIM

Bogazici University Construction Club (BÜYAP) is one of the most prestigious and active clubs since its establishment in 1987.

With its 7 organizations in a year, it offers to show Civil Engineering and its sub-disciplines with a different perspective to the students.

When looking at those events in total, BÜYAP is the largest construction club in Turkey with 1500 attendants from 70 different universities a year.

BÜYAP is a member of IACES (International Association of Civil Engineering Students) and this gives its members an opportunity to meet other civil engineering students from different countries at international organizations.

In order for our members to be well-informed about the construction industry and to be experienced before actively participating in the working life, we organize approximately 10 technical trips in a year; including one to be abroad.

BÜYAP puts emphasis on its social responsibilities and as a part of İlkokulumuz project, we plan on building primary schools every year for those in need. For now, BÜYAP has completed 3 schools and since 2018, it is working on building the first ecologically-friendly school in Turkey.

BÜYAP IN NUMBERS

Established in 1987

13.000 Attendant

97 Events

3 Elementary School

32 Sponsors

78 Technical Trip

80 Active Members

∞ Memories



ORGANIZATIONS



WHAT IS DE&CO?

DE&CO is one of the most important organizations that take place in Bogazici University. It is an annual steel bridge competition in which both graduate and undergraduate students attend every year.. It will be held for the 14th time this year since 2007.



OUR APPROACHMENT

DE&CO is a one of its kind competition in the whole Europe. It takes place at the unique atmosphere of Bogazici University Güney Square with attendants from not only Turkey but also from several countries. The purpose of this competition is to bring civil engineering and architecture students from different universities together and to give them an opportunity to present their work directly with an on-hand experience in an international contest. In addition, those students get the chance to know about the cultural and historical treasures of our city, İstanbul.



DE&CO IN NUMBERS

Aesthetics

Durability

First one in 2007

Steel Bridges with 6 meters opening

1100 Attendant

4 Different
Categories

Teams with 4-5 Members

190 Teams

950 Contestant

Duration of Installation

Efficiency



Best of 2018



 The lowest vertical deflection - 1,4 mm

 The lightest bridge - 80 kg

 The lowest horizontal deflection - 0,05 mm

 The lowest cost - 1.535.512 \$

 The shortest duration of installation - 14 minutes

EXAMPLE SCHEDULE

DE&CO Schedule

SAAT	PAZAR	PAZARTESİ	SALI	ÇARŞAMBA	PERŞEMBE	CUMA
08:00 - 09:00	Arrival	Breakfast	Breakfast	Breakfast	Breakfast	
09:00-10:00			Bridge Summit	Assembly of Bridges	Assembling Against Time	
10:00-11:00		Practise Time		Rally		Lunch
11:00-12:00			Lunch	Opening Ceremony and Team	Aesthetic Evaluation&Weight Measurements	
12:00-13:00		Construction Site Visit				Dinner
13:00-14:00			Dinner	International Night(Boat Party) + Dinner	Free Night	
15:00-16:00		Welcome Party				Free Night
16:00-17:00			Welcome Party	Free Night	Turkish Bath	
17:00-18:00		Welcome Party				Free Night
18:00-19:00			Welcome Party	Free Night	Turkish Bath	
19:00-20:00	Welcome Party	Free Night				Turkish Bath
20:00-21:00			Welcome Party	Free Night	Turkish Bath	
21:00-22:00	Welcome Party	Free Night				Turkish Bath
22:00-23:00			Welcome Party	Free Night	Turkish Bath	

*There might be changes in the program. The final schedule will be published on BÜYAP website and the Instagram page.

BRIDGE SUMMIT

During the Bridge Summit on the second day of the competition, seminars about the history of the bridges, construction process and the construction methods are given to attendants.



Previous Spokespersons

Ario Ceccotti Prof. of Timber Design

Robert E. Shaw President of Steel Str.Tech. Center,USA

Reşit Yıldız Limak CPO

Michael Virlogeux Designer of Yavuz Sultan Selim Bridge

Selami Gürel Metal Yapı CEO

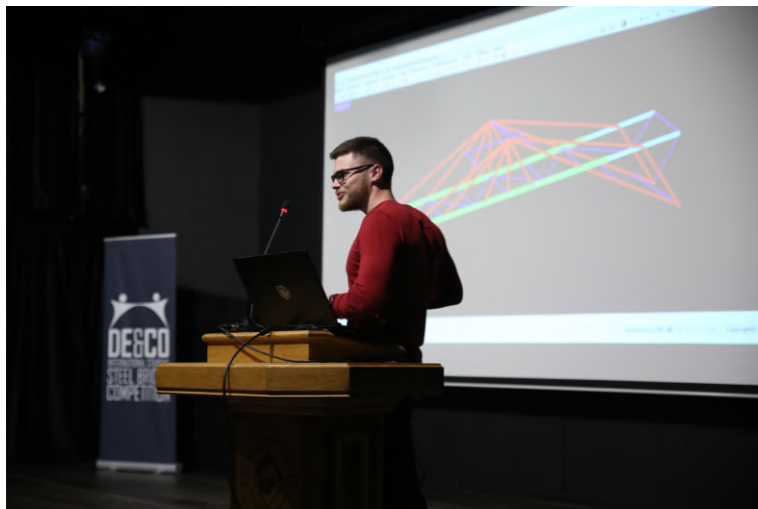
Altok Kurşun Gülsan Holding Technical Coordinator

Prof. Dr. Erhan Karaesmen Boğaziçi University

*Bridge Summit does not take place every year.

TEAM PRESENTATIONS

After the Bridge Summit, teams do a presentation about their inspiration for the design, technical details of the bridge and fabrication process.



*Presenting in English is compulsory.

AESTHETICS DAY

On the day of aesthetic evaluation, teams construct their bridges at the Güney Square within the fascinating environment of the Güney Campus and the day is spent as if it is a festival.



Workshops



Sponsor Stands



Güney Square



Aesthetic Evaluation



Lots of Fun

AESTHETICS EVALUATION


Aesthetic evaluations are made by professionals in civil engineering and architecture such as faculty members and senior executives of the leading firms in these industries.



Jury evaluates the bridges with respect to their aesthetic and originality, and gives a desired point out of 100. Those evaluations are handed over to BÜYAP team in a closed envelope.

Team that wins the aesthetics and originality award within the Design&Construct will also be given a monetary prize.

After the aesthetic evaluation, bridges' weights are measured.

 Important note: Bridges that will get a 1.5 cm deflection with a 400 kg load will not be able to get the aesthetics award.

ASSEMBLY AGAINST TIME

On the day of the greatest rivalry and pressure, teams will compete against time in order to install their bridges as fast as possible



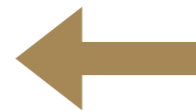
Bridges will be carried to the construction area



After the BÜYAP team and competitors take their place



And assembly against time will start



Start signal will be given



LOADING TEST

After the installations are completed;



Bridge piers will be fixed



Vertical and horizontal loading tests will be done



Pressure of the day will be released



Measurements will be noted

EXAMPLE FOR THE COST MEASUREMENT

Total Cost = Construction Cost+ Deflection Cost + Weight Cost+ Compatibility with the Organization Program - Aesthetics and Originality

Assuming that the BÜYAP team has 2 students on their second year, 1 student on his/her third year and one graduate student; and their installation time plus penalties are 20 minutes in total. Let's calculate their construction cost:

Cost of the students in their second, third or fourth year: 15.000\$/minute

Cost of a graduate: 30.000\$/minute

Construction cost is the sum of the multiples of the assembly time and the cost coefficients according to the categories of the team members.

$$20 * 15.000 * 3 = 900.000 \$$$

$$20 * 30.000 * 1 = 600.000 \$$$

$$\text{Construction cost} = 1.500.000 \$$$

EXAMPLE OF A COST MEASURING

Deflection cost is equal to the sum of horizontal and vertical deflection costs.

Vertical deflection cost = Vertical deflection(cm) * 3.000.000\$/cm

Horizontal deflection cost = Horizontal deflection(cm) * 1.200.000\$/cm

Vertical deflection < 0.35 cm = 0 vertical deflection cost

Horizontal deflection < 0.1 cm = 0 horizontal deflection cost

Assume that the team BÜYAP has 0.4 cm vertical deflection and 0.04 cm horizontal deflection:

Vertical deflection cost = 0.4 cm * 3.000.000\$/cm = 1.200.000\$

Horizontal deflection cost = 0


Total deflection cost = 1.200.000 \$

EXAMPLE FOR THE COST MEASUREMENT

Assume that team BÜYAP's bridge has 150 kg weight and has no dimensional penalty:

Weight cost = Total weight (kg) * 30.000 \$/kg

Weight cost = 150 * 30.000\$ = 4.500.000 \$

 Accommodation with the DE&CO organization schedule carries a significant importance for the BÜYAP team.

In the case of not being able to accommodate with the schedule, guides that are assigned by BÜYAP must be informed beforehand.

Objections about the competition can only be made to DE&CO coordinators.

Teams that are found to be incompatible with the schedule by the BÜYAP board members will have an additional 1.000.000 \$ at their total cost.

If it is assumed that team BÜYAP had run up to the schedule, then its penalty within this category will be 0.

EXAMPLE FOR THE COST MEASUREMENT


Cost reduction from aesthetics = Aesthetics and Originality Point * 40.000 \$

Supposing that BÜYAP team got 80 out of 100 from jury during aesthetic evaluation:

Cost Reduction = $80 * 40.000 \$ = 3.200.000 \$$

In this case, the total cost of the team BÜYAP:

$1.500.000 \$ + 1.200.000 \$ + 4.500.000 \$ + 0 - 3.200.000 \$ = 4.000.000 \$$

 For exceptional situations and other restrictions, the grading section of the rules and regulations must be read.

WHO CAN APPLY?

Undergraduate/graduate students of an engineering or an architecture faculty can apply to DE&CO.

Prep and freshman students are not able to attend DE&CO as competitors but they can attend as observers.

✗ Application of those who are not in an active relation with a school will not be accepted.

ADMISSION PROCESS

Teams wanted to apply for the competition need to fill in the preregistration form previously. This form aims to keep in touch with the people who wants to join DE&CO'20.

After that teams have to send their projects until deadline indicated.

16 teams are determined by preselection.

Teams that take part in top16 shall sign out the registration agreement to make their final enrollment.

FAYDALI LINKLER VE İLETİŞİM

Website: <http://boundeco.org/tr/ana-sayfa/>

Instagram: <https://www.instagram.com/buyap/?hl=tr>

Twitter: <https://twitter.com/buyap>

Facebook: <https://www.facebook.com/bogaziciuniversitesiyapikulubu/>

Don't forget to send your questions to infodeco@buyap.org if you have any!



Boğaziçi Üniversitesi
Engineering Faculty
First Floor 34332
Bebek/İstanbul