



ACTIVITIES REPORT 2023



MANAGER:





MESSAGE FROM THE CHIEF EXECUTIVE OFFICER

In 2023, the Brazilian Center of Steel Construction (CBCA) remained steadfast in its purpose of promoting and fostering industrialized steel construction in Brazil, due to the sector's technological development.

Last year, the CBCA carried out two unprecedented actions, with significant results. A Teacher Training Course with a program based on the most relevant themes related to steel construction was held in Salvador, with the presence of at least one teacher per state in the Northeast Region, in a total of 15 participating universities. Another action was the entity's 1st Hackathon, in which a challenge was posed to 115 civil engineering students from Mauá Institute of Technology, who presented solutions to a real problem proposed.

The year 2023 was also marked by traditional RoadShows, which this time addressed how steel structures behave in fires. The subject was chosen because of the entity's new manual, "Safety of Steel Structures in Fires". The events were held in the cities of Florianópolis, Goiânia, Salvador and Fortaleza, with more than 450 participants, 30 of them officers of the Fire Department.

The annual surveys carried out with the manufacturers of steel structures, steel tiles and steel deck, galvanized profiles for light steel frame and drywall and steel silos, carried out in partnership with the Brazilian Association of Metal Construction (ABCCEM), also deserve to be highlighted. The analysis of the Brazilian steel construction market once again demonstrated the various opportunities to develop the steel construction segment in Brazil.

Another objective of the CBCA in 2023 was to disseminate knowledge in academia,

promoting the best practices of steel construction and stimulating the exchange of knowledge and discussion of issues related to the sector. The online courses were held for another year to supply this point, through an assertive and interactive dynamic, and with the participation of more than 200 students.

With regards to the training pillar, with the partnerships of the Brazilian Association of Structural Engineering and Consulting (ABECE) and the Latin American Steel Association (Alacero), it is important to mention the 5th Contest for Engineering Students and the 16th Contest for Architecture Students that the CBCA offers to university students from all over Brazil, which once again guaranteed a unique opportunity for learning and information sharing. A R\$ 10 thousand prize was awarded to the winner for each initiative, which counted on the participation of more than 160 teams, exceeding the number of 500 students involved.

The CBCA has also established connections with teachers, students and construction professionals through participation in several events, the result of other partnerships with similar entities. More than 3,000 interested parties attended meetings, congresses and academic weeks, highlighting the participation in the largest annual event of the Brazilian Passive Protection Association (ABPP) and the Rio Construção Summit, an event organized by the Federation of the Industries of the State of Rio de Janeiro (FIRJAN).

A CBCA scientific initiation scholarship process was also completed in 2023 by a scholarship recipient from the Federal University of Amazonas, and, just last year, a new selection process was started in this same scholarship model, with the participation of another student, this time from the Federal University of Rio de Janeiro.

The last Master's Scholarship process, which began in 2021, was also finalized in 2023, this time with a student from the Federal University of Espírito Santo. The work generated the delivery of the "SSFire" software, a tool that scales steel structures in fires, which is available for download on CBCA's site.

Within the context of the dissemination of information, it is also important to highlight continued strategic efforts made on social media (Facebook, Instagram, Twitter, YouTube and LinkedIn), with almost 40 thousand followers on all these digital platforms. It is also important to note that during the year 35 different press initiatives were implemented, such as releases, annotations and articles, with 145 articles included in printed newspapers, magazines and online portals throughout the country. CBCA's site, a true portal for steel construction, received more than 300 thousand visits in 2023, with over 30 thousand of those being new visitors.

Revista Arquitetura & Aço (Architecture and Steel Magazine) continues to perform very well across its three annual editions, with more than 80 thousand accesses to its articles. The promotional videos were also released on the CBCA's youtube channel, editions of the Revista da Estrutura de Aço - REA (Steel Structure Magazine) were published and the 20 monthly works were finally registered in the Construction Bank, which received more than 35 thousand visits last year.

Given this large and relevant range of actions, the CBCA will continue to fight in 2024 alongside partner entities to increase the participation of industrialized steel construction in Brazil, always highlighting the importance of this construction method as the main alternative for the civil construction sector to meet urgent and short-term demands, in addition to promoting more productive and sustainable growth, allowing greater freedom of creation for architectural projects. The

entity will continue its work based on the fact that steel structures are one of the main solutions when we think about the industrialization of construction, providing benefits such as reduced construction time, due to the reduction of additional work and rework at the construction site, in addition to reducing the number of employees exposed to uncontrolled environments and greater waste control, mitigating waste and, consequently, mitigating the environmental impacts related to the conventional construction process. Finally, the CBCA believes that the increase in the use of steel in the civil construction sector is directly related to the resumption and strengthening of the Brazilian economy after the challenges of recent years, which is a shorter, sustainable, productive and technological way to achieve this goal, and may also contribute to the reduction of the Brazilian housing deficit.

The CBCA also coordinated the development of two scholarship programs, one of which was dedicated to Scientific Initiation and the other to Master's Degrees and included topics related to steel construction. These studies will be published through means of several scientific events and published on CBCA's site, which was accessed more than 300 thousand times in 2022, surpassing the total number of access for previous year by more than 20 thousand.



Cesar O. R. Peres
Chief Executive Officer





PROMOTE AND EXPAND
THE PARTICIPATION OF
STEEL CONSTRUCTION
IN THE DOMESTIC MARKET,
IMPLEMENTING **INITIATIVES**
AIMED AT DISSEMINATING
AND SUPPORTING ITS
TECHNOLOGICAL
DEVELOPMENT

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MEMBERS

MANAGEMENT

ArcelorMittal Tubarão

Gerdau Açominas S.A

Usiminas

COLLABORATORS

Aperam

ArcelorMittal Aços Longos

ArcelorMittal Sul Fluminense

Gerdau Aços Longos S.A.

Vallourec Tubos do Brasil S.A.

COMPANIES

ALS Comercio e Industria de Ferro e Aço Ltda.

Blat Estruturas Metálicas

Barbieri do Brasil Ind. E Com.

CBMM - Cia. Bras. de Metal. e Mineração

Center Steel Eng. Light Steel Framing

CEP - Engenharia Pré Fabricada

Comercial Gerdau

 *New companies*

Grupo Pizzinatto

ISOESTE Construtivos Isotérmicos

Perfinaço

Soluções Usiminas

Tuper

MANAGEMENT

Chief Executive Officer

Cesar O. R. Peres

Management Committee

ArcelorMittal Tubarão Eduardo Fares Zanotti

Gerdau Cesar O. R. Peres

Usiminas Miguel Homes

Aço Brasil / CBCA Alberto Cotrim

Executive Committee

ArcelorMittal Tubarão Alexandre Gama

Gerdau Rosane Beviláqua

Usiminas Humberto Bellei

CBCA Rafael Silva

Executive Management

Superintendent Alberto Cotrim

Executive Manager Rafael Silva

Marketing and Training Coordinator Ricardo Werneck

Technical Advisor Isadora Arêas

HIGHLIGHTS



CBCA Manual
Safety of Steel
Structures in Fires



Hackathon



Training Course
for Teachers
(Northeast)



STATISTICAL DATA

Production of steel structures in 2022 generated revenues of 16.2 billion reais, an increase of about 13% compared to the previous year, reveals research by the CBCA and ABCEM

The Brazilian Center of Steel Construction (CBCA) – an entity managed by the Brazil Steel Institute, in partnership with the Brazilian Association for Metal Construction (ABCCEM), finalized editions of annual surveys for 2023 performed together with manufacturers of steel structures. Implemented by E8 inteligência, a company specialized in technical and market research within the construction sector, the studies, which refer to the year 2022, present considerable growth, with an emphasis on increased revenue.

The research project “Scenario among Steel Structure Manufacturers” includes data on metal structures, electrical transmission towers, wind energy towers, structures used in solar energy park, and metal guardrails. The 349 companies participating in the surveyed scenario produced, in 2022, 1.05 million tons of steel structures, a 0.5% increase compared to 2021, with 522.0 thousand tons of production stemming from metal structure works, 491.7 thousand tons of production for works within the energy sector, and 36.5 thousand tons in the production of metal guardrails.

This amount led to a 13.2% growth in business revenue: the survey identified revenues totaling 16.2 billion reais in 2022, compared to 14.3 billion in 2021, 10.4 billion in 2020, 7.1 billion in 2019 and 5.1 billion in 2018. These data suggest that, over the last 5 years, company revenue has more than tripled.

The survey “Scenario among Steel Paneling and Steel Deck Manufacturers”, which was carried out by the

CBCA in partnership with ABCCEM, analyzed 106 different companies, 88% of which were exclusively active in the production of steel paneling and 9% in the production of steel paneling and steel deck. Within this area, there was a 18.3% growth in terms of company revenue when compared to 2021, which corresponds to approximately 8.4 billion reais.

The study “Scenario among Manufacturers of Galvanized Profiles - Light Steel Frame and Drywall” identified total growth of 5.5% (Light Steel Frame) and 9.5% (Drywall) in terms of production when compared to 2021, with an optimistic outlook for the upcoming years. The 35 companies participating in the study earned revenue totaling 1.38 billion reais, an increase of 28.4% compared to the previous year.

CHALLENGES

In the survey "Scenario of Steel Structure Manufacturers" it was reported that for 68.3% of respondents, as in the previous edition of the survey, one of the main factors that affected the growth of companies in 2022 was the high taxation that affects the industrialized construction sector. The use of unqualified material also stood out as a factor that hindered growth.

The survey "Scenario of Steel Paneling and Steel Deck Manufacturers" pointed out that competition with imported and/or unqualified material was the main external difficulty of the companies, cited by almost 60% of respondents.

The survey “Scenario among Manufacturers of Galvanized Profiles - Light Steel Frame and Drywall” showed that for about 64% of galvanized profile manufacturers, competition with imported and/or unqualified material is also the main external difficulty faced. The lack of culture when it comes to using the system is another factor that has been cited as a hindrance for companies.

Given the scenario presented, despite the difficulties, it is also important to highlight that throughout all surveys, more than half of the manufacturers were optimistic about the future, stating that 2024 studies, which will reference 2023, will reflect market growth.

Each year, research has been improved in terms of methodology, data collection, and efforts to identify new manufacturers. These efforts are part of a continuous improvement process, with the objective of presenting a better vision of the sector and that consequently assists in directing actions for a better development of the steel construction sector.

The CBCA and ABCCEM believe that such research serves to support the promotion of industrialized steel construction within society, government and the construction market, shedding light on the real importance and dimensions of steel construction.

STATISTICAL DATA

SURVEYS

SCENARIO AMONG STEEL STRUCTURE MANUFACTURERS



In this year's edition, participating steel structure-producing companies together produced approximately 1.04 million tons, with revenues totaling R\$14.3 billion and employed 31,300 individuals in 2021.

Wind and solar energy sectors have seen an increase in production. Plants are the main purchase channel and 69.9% of raw materials were acquired through these means. In terms of company growth, 47.7% of manufacturers state that improving internal processes is the main internal challenge that must be overcome.

In terms of external factors, the cost of raw materials was the main item that affected company growth and was cited by 80.1% of respondents. Initiatives aimed at improving taxation of steel products in order to optimize competitiveness in the face of competing systems is one of the main challenges for the sector, according to 56.8% of manufacturers.

Even in the face of such adversity, approximately 74.4% of manufacturers are optimistic and believe that they will achieve growth in 2022 compared to the previous year. Each year, research has been improved in terms of methodology, data collection, and/or efforts to identify new manufacturers.

SCENARIO AMONG MANUFACTURERS OF GALVANIZED PROFILES AND DRYWALL FOR LIGHT STEEL FRAME



In 2022, the participating companies of profiles for Light Steel Frame and Drywall together produced 96.1 thousand tons, resulting in a revenue of R\$1.38 billion reais.

This was a year in which the LSF profile market grew 5.5% compared to 2021. For Drywall profiles, there was a 9.5% increase in production, a value that could be higher if there was no increase in the supply of profiles with lower weight (lower quality).

The production capacity of LSF profiles increased by 10.7%, and for Drywall, the increase corresponded to 6.9% in the 2021-22 period.

In the manufacturers' view, residential works are the most favorable for the use of galvanized profiles, both for LSF and Drywall.

Competition with low product quality was the main factor that hindered the growth of companies in 2022. In relation to 2023, there is optimism in the market and 66.7% of manufacturers believe that there will be growth compared to 2022.

SCENARIO AMONG STEEL PANELING & STEEL DECK MANUFACTURERS



In 2022, the participating companies manufacturing steel panels, closing panels and steel deck, together produced 504.3 thousand tons and had revenues of R\$ 8.4 billion.

There was a slight growth in the sector compared to 2021. The production of steel panels increased by 1.3%. Steel decks remained practically constant, with a 0.9% higher production volume.

Production capacity increased to 1.20 million tons in 2022, an increase of 1.7% compared to 2021. This means that machinery occupancy is 42%, i.e. the sector operates with 58% idle equipment. The plant is the main purchase channel and 43.9% of the production is acquired by this channel. Import, in turn, is quite significant and 44.7% of the material comes from abroad.

Regarding the market, manufacturers consider that in 2022, competition with imported and/or unqualified material stood out as the item that most hindered the growth of companies, being cited by 57.4% of participants.

Paneling manufacturers are optimistic, with 69.9% of manufacturers stating that they expect market growth this year.

SCENARIO AMONG STEEL SILO MANUFACTURERS



In 2022, the participating companies manufacturing Steel Silos together produced 188.9 thousand tons and had revenues of R\$ 5.1 billion.

Production capacity was 349.8 tons in 2022, with a machinery utilization rate of 54%.

The plant is the main purchase channel and 67.9% of the production is acquired by this channel. Import, in turn, is quite significant and 24.7% of the material comes from abroad.

Regarding the market, manufacturers consider that in 2022, the cost of the raw material stood out as the item that most hindered the growth of companies, being cited by 62.5% of participants.

Steel silo manufacturers are optimistic, with 70.0% of manufacturers stating that they expect market growth this year.

This is the first edition of the study. For the coming years, the research will have a process of continuous improvement, whether in methodology, data collection and/or in the search for new manufacturers. It is a permanent improvement process, so that the results help in directing actions for better development of this segment.



INITIATIVES FOR PROMOTION AND PUBLICATION

311.641

VISITS / YEAR

DESKTOP: 73.0%
MOBILE: 26.2%
TABLET: 0.8%

25.927

NEW REGISTRATIONS

60.1%

ENGAGEMENT RATE



32.124

NEW SITE VISITORS

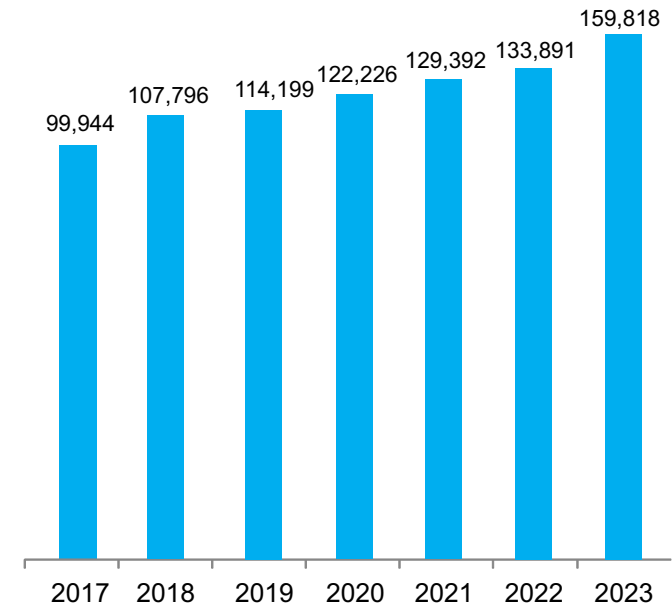
(*) Site measurements are based on Google Analytics

58.548

TOTAL PAGE VIEWS

AVERAGE SESSION DURATION: 1:13s

SITE REGISTRATIONS



NUMBERS FOR ENGLISH LANGUAGE SITE

New users: 566
Page views: 362
Average session duration: 0:29s

LANGUAGES

PT-BR: 73.26%
EN-US: 17.14%
PT-PT: 4.22%
OTHERS: 5.38%

311,641
2023

Record: 25,970 (MAY)
865.7 / day

301,458
2022

Record: 32,900 (APR)
1.096.7 / day

277,367
2021

Record: 32,900 (APR)
1.096.7 / day

267,053
2020

Record: 27,614 (JUL)
920.5 / day



● TRAINING

ONLINE COURSES IN-PERSON
COURSES CONTESTS
ROADSHOWS
WEBINARS
VIDEO CLASSES
HACKATHON
SCHOLARSHIP

● INSTITUTIONAL

CBCA
PARTNER ENTITIES
REPORT ON CONSORTIUM
ACTIVITIES

● LIBRARY

● A&A MAGAZINES

● NEWS

● AGENDA

● CBCA BENEFITS

● CONTACT US

1,182
NEW USERS

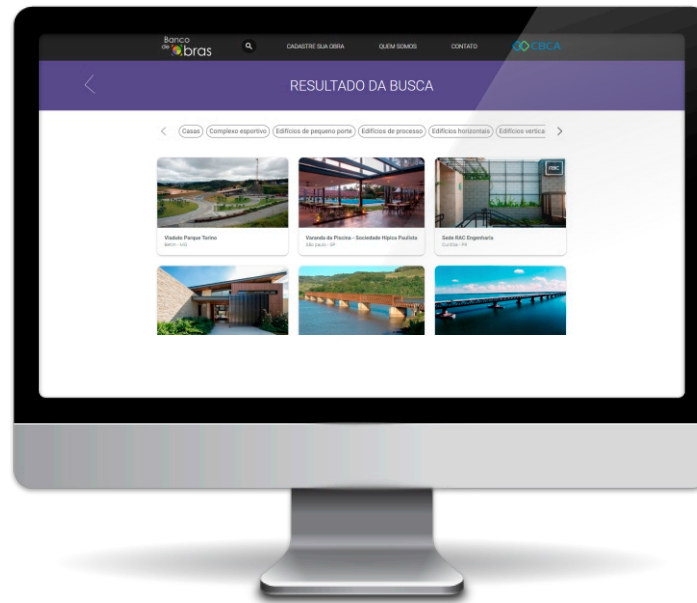
36,882
VISITS

240
NEW REGISTERED WORKS

15,047
PROFESSIONALS
(ARCHITECTS AND ENGINEERS)

15,050
PAGE VIEWS

02:01s
AVERAGE SESSION DURATION



**Integration into Guidelines for
Brazilian Steel Construction
through means of a link provided
to suppliers registered under works.**

Steel construction is becoming increasingly prevalent in Brazil.

In order to catalog and assemble data on steel works in Brazil, the CBCA has created the Construction Bank - a system used to index works by type, categories of use, designers, and manufacturers of structures.

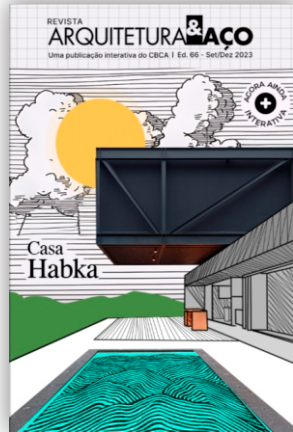
The Construction Bank aims to highlight the production chain for steel construction in addition to serving as a bank for ideas and construction processes.

- > Building typology
- > Category of use
- > Architecture
- > Structural engineering
- > Manufacturers of structures

The Construction Bank is available as part of a responsive web design for Smartphone and Tablet (IOS and Android)

INITIATIVES FOR PROMOTION AND PUBLICATION

ARCHITECTURE & STEEL MAGAZINE PUBLICATIONS



ISSUE No. 66

82,752

TOTAL USERS

69,920

NEW USERS

7,154

MAY - MONTH WITH HIGHEST NUMBER OF ACCESSES



ISSUE No. 65



ISSUE No. 64

26,414

VISITS TO MAGAZINES (ISSUES RELEASED UP UNTIL 2018)

51.6%

ENGAGEMENT RATE

223

VIEWS RECEIVED BY ARTICLES AND TECHNICAL ANNOTATIONS

AÇO ESTRUTURAL - Moorgate Exchange, Londres, Reino Unido

12/12/2019 | Artigos Técnicos

Palestrante: Alexandre Magnus Jordão

AÇO ESTRUTURAL - Ponte Ferroviária Zandhazen, Holanda

27/11/2019 | Artigos Técnicos

Palestrante: Alexandre Magnus Jordão

AÇO ESTRUTURAL - STIGA Sports Arena Eskilstuna, Suécia

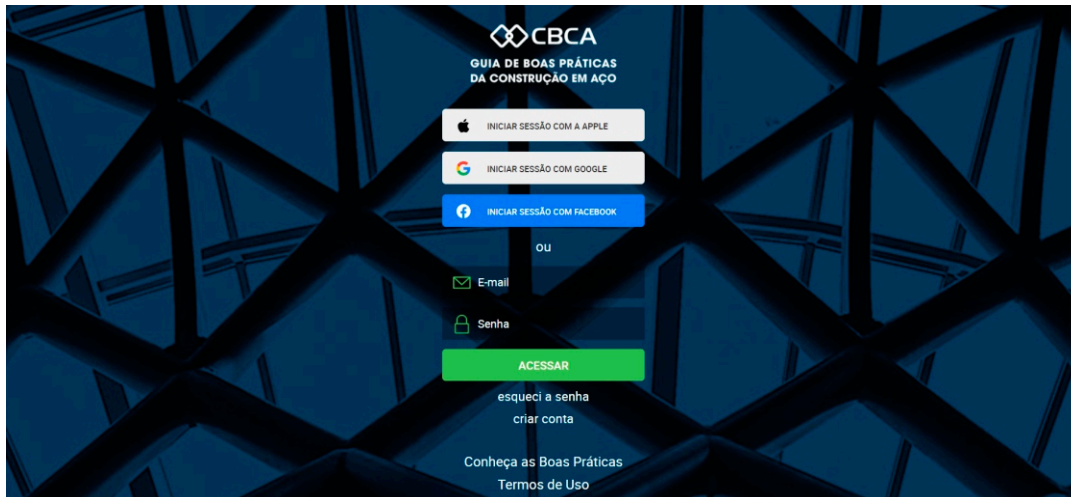
13/11/2019 | Artigos Técnicos

Palestrante: Alexandre Magnus Jordão

Released in September/19, this application seeks to offer guidance to investors, builders, architects, engineers, manufacturers, assemblers, and final customers with regards to best practices in steel construction, offering minimum recommended criteria, from the design stage to project execution, manufacture, transport and assembly of structures and interfaces.

Through means of an interactive and self-instructive checklist, professionals are able to access each of the available tabs (Management, Architecture, Structure, Manufacturing, Logistics and Assembly and Passive Protection), in order to better understand which actions must be taken to ensure that their project is executed at a high level of excellence.

The practices recommended under these Guidelines are intended to offer orientations, and those responsible for projects must define which strategies will be applied in each specific project context.



01:03s

AVERAGE TIME SPENT NAVIGATING PAGE

1,973

PAGE VIEWS

ANDROID

166

TOTAL INSTALLATIONS COMPLETED

IOS

61

TOTAL INSTALLATIONS COMPLETED

2,174

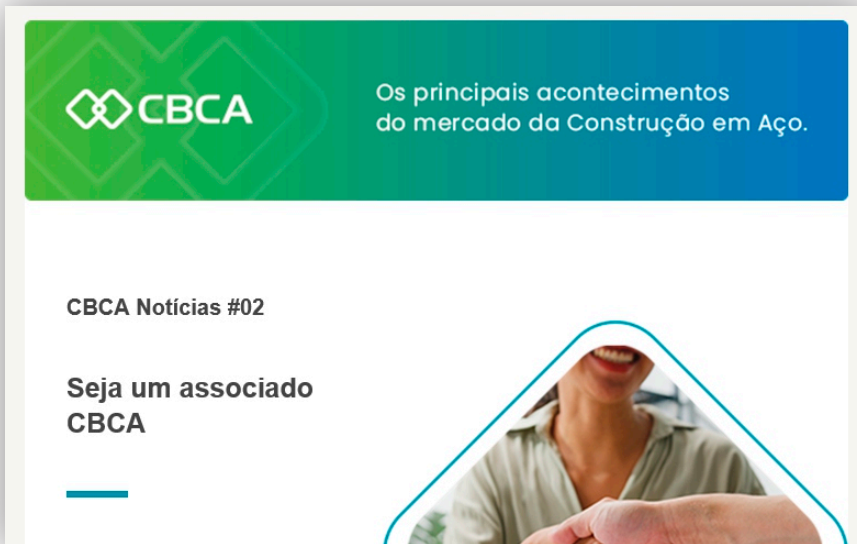
INSTALLATIONS ONTO ACTIVE DEVICES

PROMOTION & DISSEMINATION

MEDIA

CBCA NEWS

Created in 2010 and issued on a weekly basis.



5,567
VIEWS

PRESS

In 2023, 35 different press initiatives were implemented, such as releases, annotations, and articles, with 145 articles included in printed newspapers, magazines and online portals throughout the country.

Advertising value equivalency at the CBCA in 2023 totaled R\$ 916,812.16. This amount is calculated based on the press vehicle's relevance, number of hits received by the site, newspaper circulation, among other factors.

Featured newspapers: Valor Económico, Agência Estado, Diário do Comércio, Revista Técnica and A Tribuna.



35
RELEASES



145
ARTICLES
PUBLISHED

R\$ 916,812.16
PUBLICITY
EQUIVALENCE



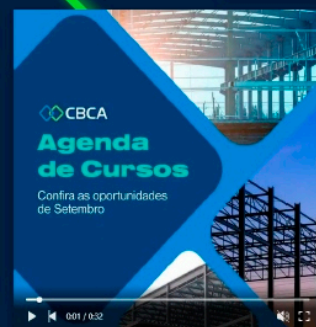
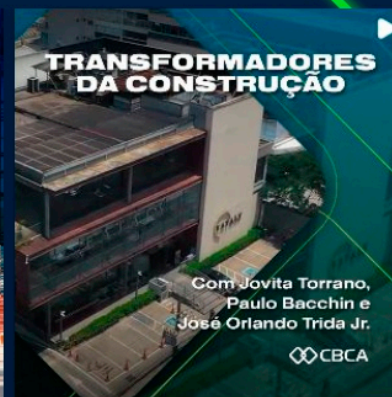
BIG NUMBERS

General



	REACH	IMPRESSIONS	FOLLOWERS	INTERACTIONS
	10.6M +16.2% compared to 2022 (accumulated JAN/DEC)	15.4M +30% compared to 2022 (accumulated JAN/DEC)	39.3K +3.14% compared to 2022 (accumulated JAN/DEC)	1.08M +127% compared to 2022 (accumulated JAN/DEC)
	-	556.7k	5,967	50.2k
	4.1M	6.37M	18,720	299.2k
	6.5M	8.2M	9,613	469.8k
	-	170.2K	1,935	888
	-	189K	3,070	269.7k

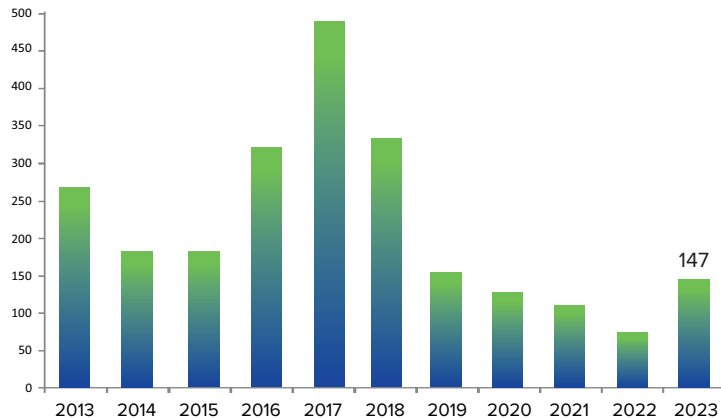
BETTER PERFORMANCE



Theme: Quality Education

In 2023, 147 teams representing 19 Brazilian states (AM, BA, CE, DF, ES, GO, MG, MS, MT, PA, PB, PE, PI, PR, RJ, RN, RS, SC, SP) and 34 Architecture Schools were enrolled. The 57 proposals received were evaluated and 30 applicants were selected for final assessment.

DEVELOPMENT OF PARTICIPATION IN CONTESTS



Winners

1st Place

FAU-USP – School of Architecture and Urbanism of the University of São Paulo

2nd Place

Federal Technological University of Paraná

3rd Place

Paulista University

Honorable Mention I

Federal University of Santa Catarina

Honorable Mention II

Federal University of Paraná



Project declared winner of the 2023.

41,426

VISITS DURING THE YEAR

13,195

VIEWS

147

TEAMS REGISTERED

2,622

NEW USERS

Theme: SOCIAL INTEREST HOUSING WITH STEEL STRUCTURES

On September 18, 2023, a remote meeting of the Judging Committee was held in order to evaluate works related to the CBCA's 5th Contest for Engineering Students.

The Judging Committee highlights the good development of the work, especially with the use of advanced and contemporary software for structural calculation, modeling of projects in BIM systems and the ability of most groups to properly conceptualize the metal structure, thus demonstrating the interest of students and their advisors in steel systems and their insertion in the exercise of structural engineering.

21,672

VISITS DURING THE YEAR

7,057

VIEWS

00:48s

AVERAGE SESSION DURATION

55.8%

ENGAGEMENT RATE

2,435

NEW USERS

Winners

1st Place

Federal University of Lavras

2nd Place

Geraldo Di Biase University Center

3rd Place

State University of Maringá

Honorable Mention I

Paulista State University

Honorable Mention II

Mauá Institute of Technology



5th CBCA Contest for ENGINEERING Students



SPONSORED / SUPPORTED

Abrainc / Deloitte - Release of the study "Productivity and Opportunities for the Civil Construction Chain - 100 participants

ConstructSteel - 30 participants
NASCC The Steel Conference - 1,400 Congress participants

CBPE - Brazilian Congress for Bridges and Structures - 380 participants

CBCA Workshop: Steel and Steel-Concrete Bridge Fatigue - 380 participants

AU&D Week - Anima Network - Workshop: Steel Industrialized Architecture and Construction - 70 participants

FUMEC - Workshop: Light Steel Framing: Design, Applications and Execution - 60 participants

1st CBCA Hackathon for Civil Engineering Students of the Mauá Institute of Technology - Opening Events and Awards - 170 participants

FAQ Event - 16th CBCA Contest for Architecture Students - 50 participants

FAQ Event - 5th CBCA Contest for Engineering Students - 15 participants

ABPP Event - SIPP - International Seminar on Passive Protection - 120 participants

Construmetal Congress Participants - 480 congress participants

Enece - National Conference for Engineering and Structural Consulting / Engineering Contest Award - 320 participants

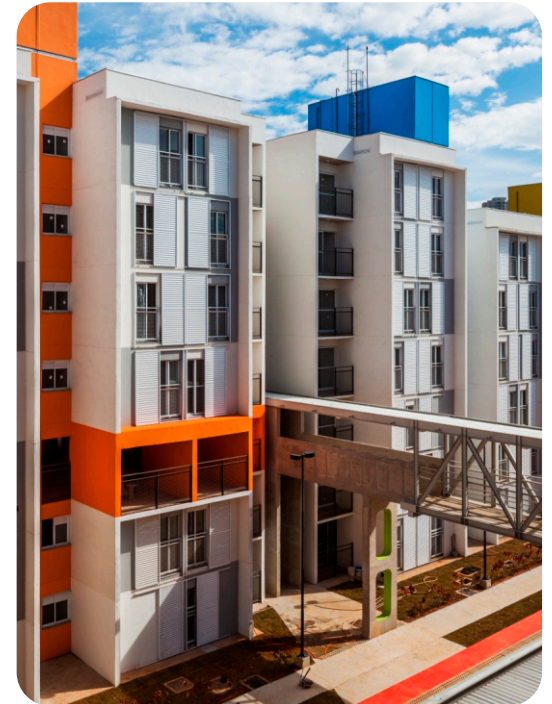
Award of the 16th CBCA Contest for Architecture Students - 150 participants

UESC Civil Engineering Week - Workshop: BIM and Steel, Hybrid and Mixed Steel and Concrete Structures Projects - Case Studies - 70 participants

LSF Congress - 300 Congress participants and 2,600 people at the fair

Abrainc Same Side Productivity Award - Institutional support at UFRJ Civil Engineering Week

2,469
PARTICIPANTS



ROADSHOW

SAFETY OF STEEL STRUCTURES IN FIRES

National circuit of technical workshops held in four Brazilian cities (Florianópolis, Goiânia, Salvador and Fortaleza), with the objective of disseminating the Manual "Safety of Steel Structures in Fires".

The purpose of the event was to approach Fire Department units, in addition to training students, teachers and construction professionals.

423

PARTICIPANTS
(IN-PERSON + ONLINE)

97%

ASSESSED THE
WORKSHOPS AS
EXCELLENT OR GOOD

33

FIRE
DEPARTMENT
OFFICIALS

100%

ASSESSED THE
WORKSHOPS AS
EXCELLENT OR GOOD





PARTNERSHIPS



worldsteel Association

- Initiatives implemented together in order to promote steel construction.



ALACERO – Asociación Latinoamericana del Acero

- Support, as Technical Secretariat, in the development of actions of CODUA (Comité de Desarrollo del Uso del Acero [Steel Use Development Committee]).
- Coordination of Brazilian participation in ALACERO's 11th Steel Design Contest for Architecture Students 2018.

NATIONAL ENTITIES

ABCCEM - Brazilian Association for Metal Construction
ABINOX - Brazilian Stainless Steel Association
ABECE - Brazilian Association for Engineering and Structural Consulting
ABENC - Brazilian Association of Civil Engineers - BA
ABM – Brazilian Association of Metalworking, Materials and Mining
ABNT - Brazilian Technical Standards Association
ABPP - Brazilian Passive Structural Protection Association
ABRAMAT - Brazilian Association for the Construction Materials Industry
ABRAINCO - Brazilian Association of Real Estate Developers
AsBEA – Brazilian Association for Architectural Firms - CE, BA, MG
DRYWALL ASSOCIATION - Brazilian Drywall Association
CAU - Council for Architecture and Urbanism - SC, GO, CE, BA
CREA - Regional Councils for Engineering and Agronomy - SC, GO, CE, BA
FIESP - Industrial Federation for the State São Paulo
FIRJAN - Industrial Federation for the State of Rio de Janeiro
ICZ - Institute for Non-Ferrous Metals
INDA – National Steel Distributors' Institute
SICEPOT - - Union for the Heavy Construction Industry - MG
SINAENCO - National Union for consultative engineering and architecture companies - CE and SP
SINDUSCO - Union for Construction and Furnishing Industries - SC, GO, CE, BA

UNIVERSITIES

Geraldo Di Biase University Center –
Cesmac University Center
FUMEC - Minas Gerais Foundation for Education and Culture
IFCE – Federal Institute of Ceará
IFS - Federal Institute of Sergipe
IFSC - Federal Institute of Education, Science and Technology of Santa Catarina
IMT – Mauá Institute of Technology
Newton Paiva University Center
PUC-GO - Pontifical Catholic University of Goiás
UDESC - State University of Santa Catarina
UEL - State University of Londrina
UEM - State University of Maringá
UEMA - State University of Maranhão
UEPB - State University of Paraíba
UESC - State University of Santa Cruz
UFAL - Federal University of Alagoas
UFAM - Federal University of Amazonas
UFAM – Federal University of Bahia
UFAM – Federal University of Bahia
UFAM – Federal University of Bahia
UFC – Federal University of Ceará
UFC – Federal University of Ceará
UFES – Federal University of Espírito Santo
UFG - Federal University of Goiás
UFLA - Federal University of Lavras
UFMA - Federal University of Maranhão
UFPB - Federal University of Paraíba
UFPE - Federal University of Pernambuco
UFPR – Federal University of Paraná
UFRJ – Federal University of Rio de Janeiro
UFSC - Federal University of Santa Catarina
UFT - Federal University of Tocantins
UNESP – Paulista State University
Uniaraguaia - GO
UNIFACS -
UNIFAMETRO - CE
UNIFOR - University of Fortaleza
UNIFOR CE - University of Fortaleza
UNIJORGE - Jorge Amado University Center
UNINOVAFAPI - Uninovafapi University Center
UNIP - Paulista University Catholic University of Bahia
UNP - Potiguar University
USP - University of São Paulo
URFPR - Federal Technological University of Paraná



PROMOTION & STANDARDIZATION OF QUALITY

- ABNT NBR 8800:2008: Standard finalized and forwarded to ABNT for new Public Consultation.
- CE - 28:001.007 - Steel Panels: standard restarted.
- ABNT/CEE-231 "Design of Metal, Wood, Concrete and Mixed Structures and Inspection of Metal, Wood and Mixed Structures": standard in progress.
- CE-002:122.016 - Wind-related forces in buildings for revision - NBR 6123: standard finalized.
- CE 28.001.04 - Welded and Cold Conformed Profiles: standard in progress.
- CE - 003:082.001 - Photovoltaic Conversion System: standard in progress.



TELHA DE AÇO

Só certificada!

As telhas de aço são amplamente utilizadas em edificações industriais, comerciais e residenciais, por conta dos seus atributos de desempenho, facilidade de instalação, velocidade de execução, versatilidade e durabilidade. Esse último pode ser inclusive ampliado, por meio de revestimento e pintura. Porém, para garantir a qualidade e a segurança desse componente é extremamente importante utilizar telhas de aço seguindo a norma NBR 14513.

VANTAGENS DA CERTIFICAÇÃO PARA FABRICANTES

Garantia de Conformidade do produto com as Normas Técnicas / Melhoria do processo produtivo e organizacional através das avaliações dos requisitos da qualidade / Aumento da produtividade / Diferenciação dos produtos no mercado em relação à qualidade.

Centro Brasileiro da Construção em Aço

BENEFÍCIOS DA CERTIFICAÇÃO PARA A SOCIEDADE

Conformidade com Normas Técnicas atestada por organismo acreditado pelo INMETRO / Segurança para o Consumidor / Concorrência leal entre fabricantes / Proteção ao meio ambiente.

ESPESSURAS NORMATIZADAS

Conforme a Norma ABNT NBR 14513, telhas podem ser fabricadas com espessuras nominais variando de 0,30 mm a 1,31 mm.

Tabela 1 – Revestimento mínimo

Tipo de revestimento	Referência normativa	Massa mínima do revestimento ^a g/m ²	Denominação do revestimento
Zincado por imersão a quente b	ABNT NBR 7008-1 ABNT NBR 7008-3	275	Z275
Alumínio-zinco por imersão a quente	ABNT NBR 15578	150	AZ150
Zinco-alumínio-magnésio por imersão a quente	ABNT NBR 16990	120	ZM 120

^a A massa mínima refere-se ao total nas duas faces (média do ensaio triplo), de acordo com a ABNT NBR 16990.
^b Telha sem pintura.

Tabela 4 – Afastamentos superior e inferior da espessura nominal

Espessura nominal mm	Espessuras-limite	
	Mínima mm	Máxima mm
0,32	0,30	0,34
0,38	0,35	0,39
0,43	0,40	0,46
0,50	0,47	0,54
0,65	0,60	0,70
0,80	0,75	0,85
0,95	0,89	1,01
1,25	1,19	1,31

ACESSE O SITE E CONHEÇA MAIS
www.cbca-acobrasil.org.br



Flyer was distributed at all events that the CBCA held and participated in 2023, in addition to strategic posts on social media and publications on the site.

Téchne Magazine with exclusive material.

a revista do engenheiro civil
revistatechne.com.br

téchne

Edição 206 ano 31 Julho 2023

Leve e estanque

Telhas de aço garantem desempenho termoacústico e fácil reposição em estruturas de médio e grande porte. Conheça soluções inovadoras.



DEVELOPMENT OF TECHNICAL MATERIALS

DEVELOPMENT OF TECHNICAL MATERIALS

STEEL STRUCTURE MAGAZINE - REA

The magazine, which is supported by the CBCA, offers a space for professionals to present their scientific articles or technical annotations for topics related to steel structures and mixed steel-concrete structures.

The publication, which is scientific in nature, relies on an active independent editorial board for the evaluation of articles. The magazine's 12th volume, which contains two editions with a total of 8 articles, was published with participation from researchers in Brazil and Portugal. All articles receive a DOI (*).

(*) DOI is an acronym for Digital Object Identifier. It is a standard for identify documents within digital networks.



12,818
ACCESS

Devices
Desktop: 73.8%
Mobile: 25.2%
Tablet: 1.0%

4,794
VIEWS

1,656
NEW USERS

Brazilian Steel Construction Guidelines are a pioneering initiative from the Brazilian Center of Steel Construction - CBCA, implemented with support from the Brazilian Association for Metal Construction - ABCEM and seeking to encourage growth within the sector. These guidelines are used to map out and disseminate information on the production chain used in steel construction, facilitating consumer access to the different products, services and solutions available on the market.

The Guide is consistently updated in order to broaden its scope, incorporating new market segments for steel construction and participants.

29,498

NUMBER OF TIMES
ACCESSED

3,796

DOWNLOADS

3,439

NEW USERS

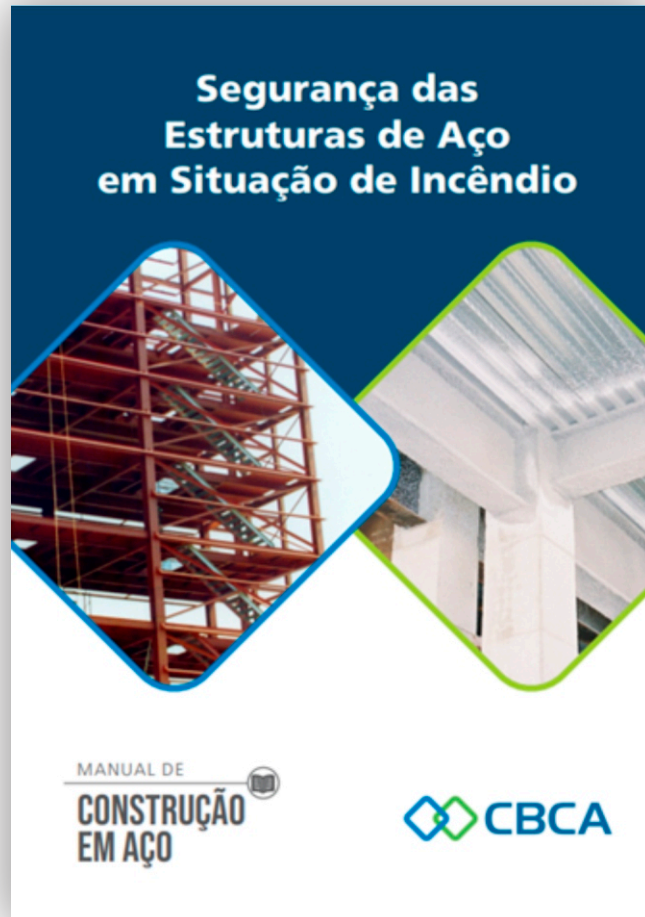
957

PARTICIPANT
COMPANIES

01:03s

AVERAGE TIME





14,566

NUMBER OF MANUAL DOWNLOADS

1,018

NUMBER OF SOFTWARE

Manuals Completed in 2023:

- Safety of Steel Structures in Fires (with software)

Editions Scheduled for 2024:

- Manual for Building Facades (new)



LABOR QUALIFICATIONS

PURPOSE

Practical activity, lasting 7 days (May 19 to 26), where a challenge was posed to the groups of students, to present solutions to the problem proposed by the CBCA. The 14 teams were made up of 115 students from the 2nd through 4th years of the Civil Engineering course at the University Center of the Mauá Institute of Technology. Students received guidance from course teachers and tutors.

THEME

Metal bus shelter. Proposals were developed for new public transport passenger shelters in the city of São Paulo, favoring the use of metal structures, based on a model project.

AWARDS

Trophy, free registration for a CBCA online course, CBCA manuals and spring kit.

115
STUDENTS

ELEMENTS DELIVERED BY THE GROUPS

- Design sheets with plan, cut, facade and foundation blocks;
- Basic technical details and specifications;
- Three-dimensional model developed using the BIM tool;
- Bill of materials;
- Descriptive memorandum;
- Budget;
- Grounding proposal, according to the model presented in the request for proposal.

PARAMETERS OF PROJECTS AND STANDARDS

- The shelter should meet the standard of a modular structure as well as the following standards: NBR 9050:2020, NBR 8800:2008, NBR 6118:2013 and NBR 6120:2019.
- The students had to take into account protection against rain, vandalism, visibility from the street, a rear closure, an advertising panel, provision for a garbage can, the possibility of coupling the modules and benches sideways and space for people with special needs.
- The steel structures of the bus stops were analyzed, dimensioned and detailed.



PURPOSE

Teacher Training Course - To familiarize teachers of the Steel Structures subject with the selection of materials and the dimensioning of steel structural elements for buildings in accordance with ABNT standards, as well as providing important notions of aspects related to constructability (detailing, manufacturing, transportation, assembly and durability).

TEACHER

Fernando Ottoboni Pinho.

FOCUS

Civil engineering courses from universities in the Northeast Region

PLACE / DATE

Salvador / October 26-27

PARTICIPATION

Presence of at least one teachers per state in the Region, in a total of 15 participating universities, 8 of them federal.

PROGRAM

Based on the most relevant topics related to steel construction, supported by the CBCA technical manuals and associated manuals/catalogs, lasting 40 hours.

PARTICIPATING UNIVERSITIES

UFAL - Federal University of Alagoas
Cesmac - Cesmac University Center
UFAM – Federal University of Bahia
UFAM – Federal University of Bahia
UESC - State University of Santa Cruz
UFC – Federal University of Ceará
UNIFOR CE - University of Fortaleza
UEMA - State University of Maranhão
UFMA - Federal University of Maranhão
UFPB - Federal University of Paraíba
UEPB - State University of Paraíba
UFPE - Federal University of Pernambuco
UNINOVAFAPI - Uninovafapi University Center
UNP - Potiguar University
IFS - Federal Institute of Sergipe

TESTIMONIALS

"The course is important to show an overview of how the content of steel structures is being approached in Brazil, with a vision based on practice."

"The CBCA's idea of organizing a teacher's course was great. We left there with great partnerships, which will generate scientific articles in the metal area. I imagine that your goal has been met, as we left this course inspired."

"The course far exceeded my expectations. Professor Pinho has excellent teaching skills and the life experience that he passed on to us was immeasurable."



CHARACTERISTICS OF STEEL CONSTRUCTION

ECONOMIC VIABILITY OF STEEL STRUCTURES

TYPES OF PROFILES

CONNECTIONS

TRANSPORT AND ASSEMBLY OF STEEL STRUCTURES

FIRE SAFETY IN BUILDINGS

CORROSION PROTECTION

STEEL STRUCTURES

STRUCTURAL DESIGN

EXTERNAL SEALING AND SLABS



MOST DOWNLOADED
VIDEO LESSON

**CHARACTERISTICS
OF STEEL
CONSTRUCTION**

636

NUMBER OF TIMES
ACCESSED

2,545

PAGE
VIEWS

841

DOWNLOADS

LABOR QUALIFICATIONS

PROVISION OF COURSES

ONLINE COURSES

INTRODUCTION TO
STEEL CONSTRUCTION

EXECUTION OF
STEEL STRUCTURES

STEEL STRUCTURAL
SYSTEMS

LIGHT STEEL FRAMING (NEW)

SIZING STEEL STRUCTURES

146

STUDENTS

ONLINE COURSES WITH LIVE CLASSES

DESIGN OF STEEL BRIDGES
ACCORDING TO NBR 16694

SIZING OF STEEL ELEMENTS

STEEL MULTI-STOREY BUILDINGS

55
STUDENTS

Undergraduate Subject - UFRJ

Classes start on 04/04/23, ending on 07/22/23.
The course with the theme "Manufacture, Transport and Assembly of Steel Structures" was held for 23 students.

Post-Mackenzie

Collaborator Flávio Gaiga was again the partner of this action, as a result of the CBCA's partnership with the university and ABECE. A total of 30 students received about 6 hours of content on steel construction.

For 2024, GE received the invitation to expand the content on steel construction in 6 hours, advancing to the dimensioning of steel structures, and is assessing the weight that the expansion will cause in the CBCA's annual budget.

SCHOLARSHIP FOR SCIENTIFIC INITIATION

The UFAM - Federal University of Amazonas scholarship, with the theme: "Thermal performance in buildings built using the Light Steel Frame method in the Amazonian context", developed during 2023, was finalized with the delivery of the final report. In 2023, a new selection process was also carried out, through which research proposals were received and the work performed by UFRJ – Federal University of Rio de Janeiro was selected as winner of the selection process, with the theme: Structural design of innovative steel and concrete prefabricated stiffness cores for multilevel buildings. The project will be developed throughout 2024 and is expected to be delivered in December 2024.

SCHOLARSHIP FOR MASTER'S DEGREE PROGRAM

Thayná Marcelino, a student at the Federal University of Espírito Santo (UFES), with guidance from the professors Fernanda Calenzani and Macksuel Soares, was awarded the CBCA's master's degree scholarship in 2021/2022. The process was completed in 2023 and the work was delivered, with the title "Analysis and dimensioning of fire-resistant coating materials in steel structures", together with the SSFire software. The tool scales steel structures in a fire situation and is available for free download on the CBCA site along with the manual "Safety of Steel Structures in Fires".



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ACTIVITIES REPORT 2024

MANAGER:

