Control Room Design
Control Room Solutions
We put people and productivity first
Operator-focused control room design drives productivity
Quality and safety to new levels

Empower your operators to optimally handle and safeguard mission critical processes

Control room operators make hundreds of decisions every working day – decisions that have a great impact on productivity, quality, and safety. What’s more, the more alert, stimulated and harmonious they are, the better the decisions they make. Thus, the key focus for plant and control room managers should be creating and maintaining operator well-being at levels that ensure their very best performance. That strive for operational excellence will not only attract the most qualified and sought-after operators, it will also reduce human errors and improve plant productivity.

Today, the way to achieve this goal is to embrace control room form, function, layout, workflow, lighting and acoustics to create a design that empowers operators to optimally handle and safeguard mission critical processes. Such designs are now available and in use in the form of ABB Control Room Solutions.

Huge productivity gains to be made
The yearly losses in global production due to human error are huge, and they can often be attributed to badly planned control rooms and poor operator working conditions; sub-optimal information handling and ergonomics simply result in operator fatigue. Thus it’s time to raise control room environments to levels where operator well-being is regarded as an essential success factor for safe, productive and reliable operations.

The 4th industrial revolution and Internet of Things (IoT) will provide ever-growing amounts of process data that will be analyzed in real time by fewer but highly educated operators in a 24/7 working environment to give flawless operation and high productivity. That’s the theory. But this will only happen when human factors are given as much attention as technical specifications and features. When collaboration and information interaction is prioritized, operators stay alert and motivated.
ABB promotes operator health and well-being
Operations centers designed and equipped by ABB showcase any control system and offer the flexibility to adapt new technologies. Most importantly, human factors form a fundamental foundation of the control room solution; operators are happier, more alert, less stressed, and much safer. The result is increased productivity and less downtime.

Working in close co-operation with human factor engineers, research institutions, suppliers, and system integrators, ABB has designed a wide range of state-of-the-art control rooms that feature robust, advanced ergonomic workstations and auxiliary equipment. The designs are unique, modular, and space-efficient. They empower and motivate operators worldwide to work in harmony with the latest technology.

Human factors
People’s behavior at work is influenced by their work environment, the organization, job factors, and individual characteristics. This affects health and safety. Human factors is about understanding the interactions of individuals with each other, facilities, equipment, and systems.

The findings are applied in our design process to optimize human well-being, safety, and overall system performance. Human factors is all about fitting the job to the human.
Control room design for the future

The control room is the most important room in your facility – it’s where daily decision-making affects corporate goals and return on plant assets. Integrative, individual, and ergonomic control room design enables the operator to become a key part of the process.

ABB optimizes control room layouts based on ergonomics and the customer’s process. Everything is arranged to induce collaboration and teamwork. Whether you need to remodel and optimize your current control room, consolidate operations, or build a new control room, ABB has the right solution for you. Even surprisingly small spaces are utilized to their full potential.

The result is a control room design that improves operator alertness, drives efficiency, promotes collaboration, and cuts total costs. Furthermore, the designs can be applied to any industry or utility. Our reference list is extensive, ranging from transport, oil and gas, power generation, mining, manufacturing, and process control to police, fire, and ambulance services.

ABB control room designs increase flexibility
Involving ABB in a project ensures that the operator working environment is planned and furnished as a complete solution, avoiding many of the difficulties often associated with a new control room. A conceptual design study gives each project a unique visual understanding of your different opportunities.

ABB-designed control rooms drive efficiency and cut costs.

With unique solutions integrated in the design, it’s possible to reduce architecture-related costs and shorten total project times. Lower costs and increased flexibility for late-stage changes are further benefits. Thanks to experience from multiple industries and countries, ABB control room designs both drive efficiency and cut total costs.
Every detail counts when investing in your control room
With technology racing ahead of personnel development, many new technologies are being under-utilized. While training and direct interfaces are being improved as fast as possible, we believe that the values of other key components are underestimated. For example, focusing on workplace ergonomics and efficiency based on actual needs and future adaptations to process and technology evolution will create successful control room designs that are built to last.

Other crucial factors include the internal layout of the control room, auxiliary furnishings, lighting systems, airflows, and acoustics. In each case, the focus has to be on the operators, first according to personal preferences and then as a collaborative group. By fulfilling the latest human factor guidelines, ABB designs will improve operator effectiveness and, just as importantly, attract the new generation of operators who view such attention to detail as an essential component of their working environment.

Contacting ABB control room solutions team early avoids many common errors associated with the ergonomic design of control centers.

Early consultation pays handsome dividends
ABB's control room solutions are based on an iterative process, taking considerations from both users and management into the final design.

Involving ABB early avoids many common errors associated with the ergonomic design of control centers and other demanding 24/7 environments. Not only does this save time and costs, it also enables you to take advantage of our extensive experience in presenting opportunities to test layout options in 3D or virtual reality at an early stage. Armed with this insight, you will be much better equipped to choose with confidence the optimal layout and design for your needs.

A well designed control room solution, whether it's a new site or upgrade, total or sectored, is your assurance of safer, alerter operators, more attentive monitoring, quicker and more rational responses, and higher productivity. Further added values are improved staff retention and more widespread interest in operator careers.

Keys to high productivity in 24/7 environments:

• Control rooms focusing on the operator not the technology
• Alertness and precision through proper human factors/ergonomic support
• Synergies with auxiliary furniture and storage solutions
• Secluded task zones for focused and efficient monitoring and collaboration
• Simplified project adaptations and flexible future-proof solutions
Focusing on operator alertness is the key to profitability

24/7 control room solutions designed for the long-run and built to last

An operator environment designed with human factors in focus can convert potentially dangerous fatigue and distraction into proactive alertness, extracting the very best from every individual in both routine operations and critical situations.

Operators are not static robots. They are human beings who thrive on variety, stimulation, activity, and choice.

Each individual is different and has different needs. The challenge is to create a working environment where each and every operator feels alive, welcome, comfortable, motivated, professional, and engaged.

Empower operators to optimize processes
Operator actions have a direct impact on uptime, production output, quality, and safety. However, operators are often hindered by a lack of attention to human factors. This hinders their ability to ‘stay on top of’ the process plant and adversely affects their interaction with the control system.

ABBs control room solutions improve operator working conditions by providing a complete cockpit environment that can be adapted to everyone’s needs. This ergonomic environment helps operators do a better, more effective job, thereby enhancing plant availability, profitability, and safety.

Optimal comfort ensures performance in 24/7 control environments
Operator desks are built to match the physical dimensions and personal preferences of each individual. With motorized sit/stand desk height, screen adjustment options, and light and sound settings, each environment represents the ultimate in form and function. Designed to keep operators alert during monotony and calm in emergencies, the desks and auxiliary products are bio-mechanically optimized, appealing to use and built to last.

The EOW platform is much more than just a traditional operator desk. It includes everything needed to fulfill the latest human factor standards.

01 The Extended Operator Workplace (EOW) environment keeps the operator in focus by providing unparalleled workplace ergonomics plus a close pre-integrated large-screen overview for clear and concise plant-wide visualization.

02 Everyone is unique and have different needs. So, it’s important to have a workplace that can be adapted so that you have good sight angels and ergonomics no matter your age or height.
Reasons to invest in your control room

5% On average global annual production is lost due to unscheduled downtime.

80% of unscheduled shutdowns are preventable...

40% of which are caused by humans.

Operator wellbeing is the key to productive, and reliable operations.

Ergonomic factors and personal control over the control room environment boosts productivity, quality, and safety while attracting and retaining skilled operators.

Additional benefits

- Save on average 35% space
  Smaller footprint cuts cost and gives room for other uses such as collaborative areas.

- Boost collaboration
  Optimized control-room layouts with ergonomic furniture induce collaboration and teamwork.

- Attract ‘Generation Gamer’
  Future operators are highly educated, brought up with modern interfaces and have high demands on their work environment.