

Control Room Design

Control room solutions that put people and productivity first

Operator-focused control room design drives productivity, quality and safety to new levels



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. For plant and control room managers, the key question is thus how to create and maintain operator well-being at levels that ensure their very best performance. Such an attractive environment will not only attract much sought after ‘new-generation’ 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 CGM Control Room Solutions.

Empower your operators to optimally handle and safeguard mission-critical processes

Huge productivity gains to be made

The yearly losses in global production due to human error are huge, and they can often be put down to badly-planned control rooms and poor operator working conditions; sub-optimal information handling and ergonomics simply result in operator fatigue. It’s thus 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 fault-free 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.



CGM promotes operator health and well-being

Operations centers designed and equipped by CGM 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, system suppliers and system integrators, CGM has designed a wide range of state-of-the-art control rooms that feature robust, advanced ergonomic workstations and auxiliary equipment. CGM's designs are unique, modular and space-efficient. They empower and motivate operators the world over to work in harmony with the latest technology.

Operator well-being is a key success factor for safe, productive and reliable operations

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.

CGM optimizes control-room layouts, investing substantially in the design of hardware HMI furniture based on extensive ergonomic and anthropometric data (anthropometric = the science that deals with measurements of the human body). 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 CGM has the right solution for you. Even surprisingly small spaces are utilized to the full.

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. The reference

list is extensive, ranging from transport, oil and gas, power generation, mining, manufacturing and process control to police, fire and ambulance services.

CGM control room designs increase flexibility
Involving CGM 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.

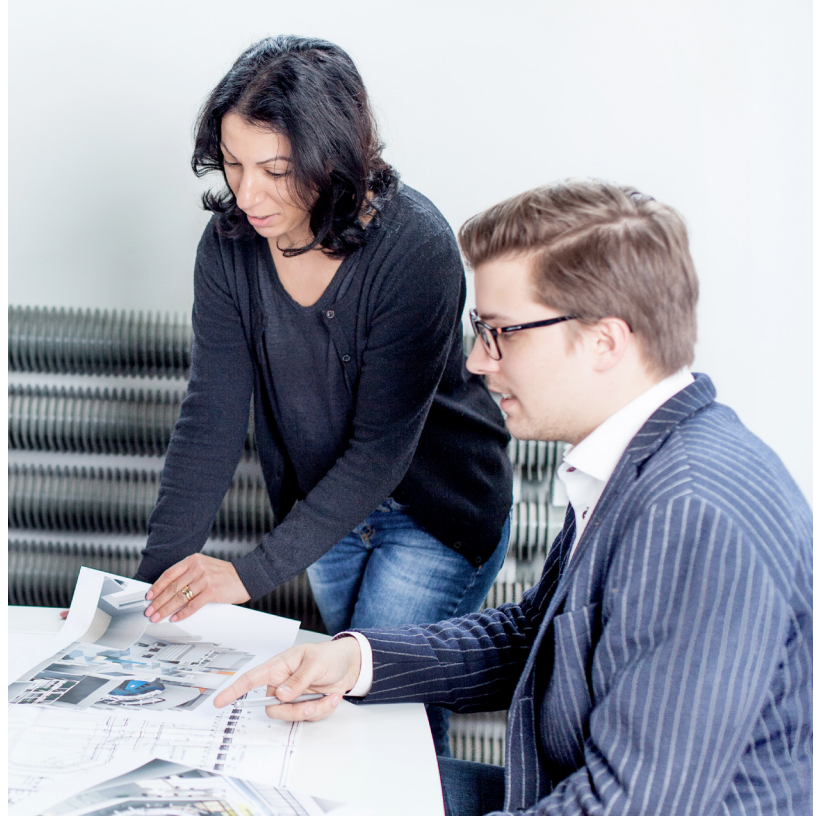
CGM-designed control rooms drive efficiency and cut costs.

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, CGM 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 underutilized. 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.

Such designs include HMI displays that position and prime each individual operator to interact optimally with the information they present. Other crucial factors include the internal layout of the control room, auxiliary furnishings, lighting systems, airflows and acoustic controls. 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, CGM 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 CGM early avoids many common errors associated with the ergonomic design of control centers.

Early consultation pays handsome dividends

CGM's control room solutions are based on an iterative process, taking considerations from both users and management into the final design.

Involving CGM 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-build or upgrade, total or sectorized, 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
- Productive ambience environments featuring the latest airflow, lighting and acoustic control research
- Simplified project adaptations and flexible future-proof solutions

Focusing on operator alertness is the key to profitability



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.

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



Each individual has different dimensions and can have a different cone of fixations, line of sight, near-point, field of vision and postural preferences within a given task zone.

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 that extracts 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 has different dimensions and can have a different cone of fixations, line of sight, near-point, field of vision and postural preferences within a given task zone. The challenge is to create a working environment where each and every one feels alive, welcome, comfortable, motivated, professional and engaged.

Empower operators to optimize processes

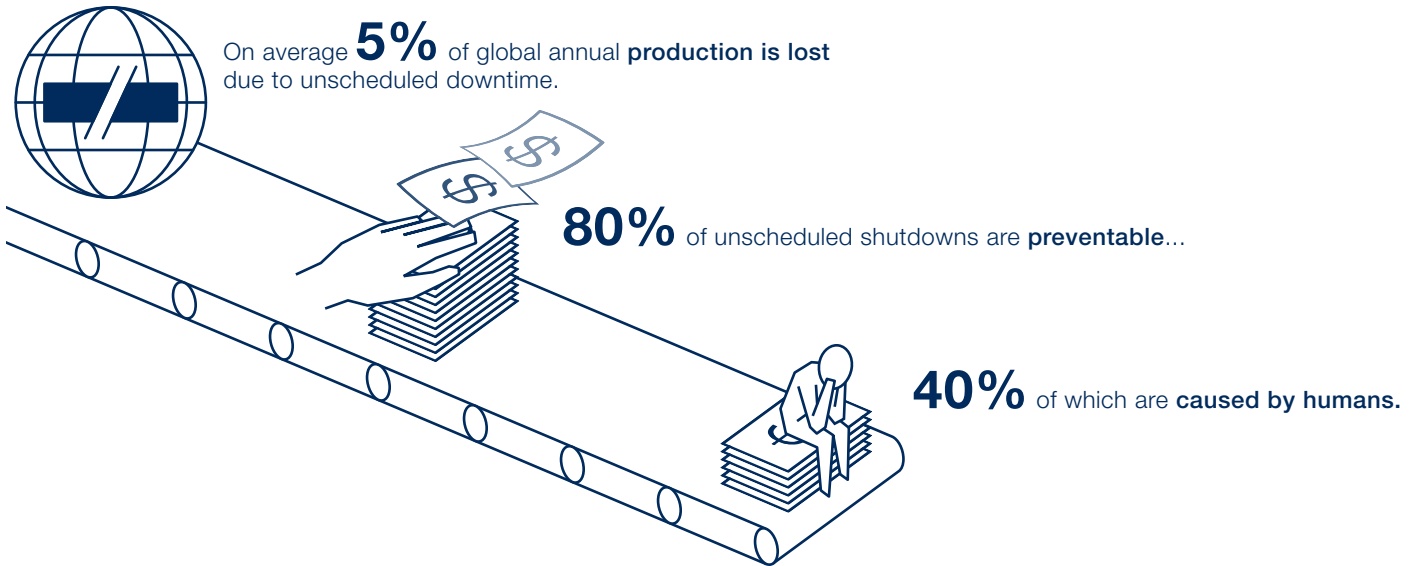
Operator actions have a direct impact on uptime, production output, quality and safety. However, operators are often hindered by a lack of attention to human factors. This hinders their ability to 'stay-on-top' of the process plant and adversely affects their interaction with the control system.

CGM operator solutions improve operators' working conditions by providing a complete micro-environment that adapts to each individual's needs. This attractive ergonomic environment helps operators do a better, more effective job, thereby enhance plant availability, profitability and safety.

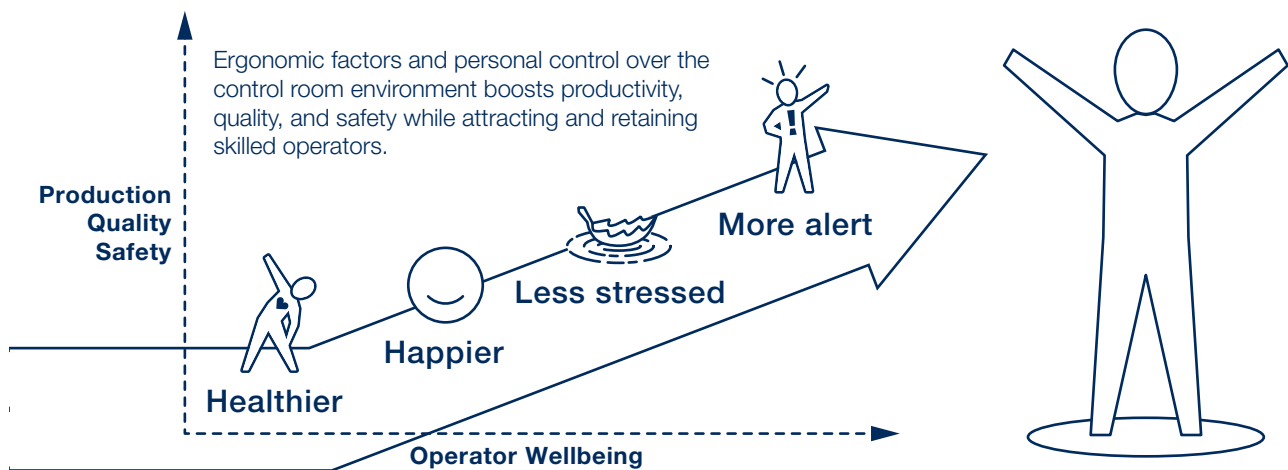
Optimize human performance in 24/7 control environments

Operator desks are built to match the physical dimensions and personal preferences of each individual. With motorized sit/stand desk-height, screen adjustment options, 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.

Reasons to invest in your control room



Operator wellbeing is a key success factor for safe, productive, and reliable operations.



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.

Disclaimer
CGM reserves the right to make changes without further notice
to any products to improve reliability, function, or design.
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