VISUAL DISPLAYS

**LTSMG Webinar
May 2020 Programme**

4 – DISCAS standard for HE

DISPLAYS, LIGHT & ENVIRONMENTAL EXPERTISE

PRODUCTS, SERVICES, SPECIALIST CONSULTANCY

Presenter – Greg Jeffreys

VISUAL DISPLAYS

- ▶ Managing Director, Visual Displays (formerly Paradigm AV)
- ▶ Specialisms include standards, displays, light & lighting, VC lighting, teaching space & meeting room design
- ▶ Chair, AVIXA Standards Steering Committee
- ▶ Task group member, AVIXA's new UX for AV Design standard
- ▶ Task group chair ANSI/AVIXA DISCAS standard – image size, resolution, viewing positions/angles, content size guidance
- ▶ Lead writer, PISCR image contrast standard – and new ISCR standard task group
- ▶ President of InfoComm/AVIXA 2012, board member 2008-13
- ▶ Former visiting lecturer, UMIST – post-grad MSc *Sustainable Electronic Building Design* (Prof Geoff Levermore)
- ▶ Proud associate of AV User Group!

LTSMG webinar series programme

▶ Monday – Standards for Technology Campus Management

▶ Tuesday – HE Teaching Space Design

▶ Wednesday – Display Specification and sign-off

▶ Thursday – ANSI/AVIXA DISCAS Standard for HE

▶ Friday – On-campus Room & System Auditing

Poll questions

PLEASE KEEP QUESTIONS COMING DURING THE WEBINAR!

ANYTHING YOU WANT ADDED INTO THE WEEK'S SESSIONS??

VISUAL DISPLAYS

Themes for the week

▶ AV is complex, multi-disciplinary, multi-stakeholder – why standards provide the tools you need to get the results you need

▶ Easier to use than not to use

▶ Removes subjectivity

▶ Improved communication with senior management and other stakeholders

▶ Metrics for achieving best budget value

▶ Better and unequivocal communication with integrators

▶ Clearly defined and measurable outcomes with integrators

▶ AV being considered at earliest possible project phase

▶ Post lockdown, students will need to see and hear content in the farthest corners of teaching spaces

  ▶ AV Standards

  ▶ Linking 'hooks' into environmental standards

Learnings from Day 3?

▶ Thinking about gradual return to campus

▶ Use of hire equipment for short/medium term flexibility

▶ Future application of HAAS?

▶ Moving into Day 4…

　　▶ DISCAS: The Full Monty!!

AVIXA V202.01:2016 (Formerly ANSI/INFOCOMM V202.01:2016), Display Image Size for 2D Content in Audiovisual Systems

Scope

▶ This Standard defines the calculations required to determine minimum image size relative to viewing locations in both new and existing installations

▶ This Standard applies to the overall system and not the performance or efficiency of any component.

▶ This Standard uses two out of four viewing categories defined in ANSI/INFOCOMM 3M-2011, Projected Image System Contrast Ratio.

Application
Learning objectives

▶ Plan and design new displayed image systems

▶ Determine image size relative to space and viewing requirements

▶ Determine Closest and Farthest Viewer Positions

▶ Determine horizontal angles of view

▶ Determine required resolution, where applicable

▶ Provide metrics for content design

Image size

- Image size is determined by image height, not width
- Image height specification is factored by farthest viewing position
  - No change there, but brand new metrics

DISCAS viewer categories

- Only two taken from PISCR's four:
  - Basic Decision Making (= most systems)
    - Viewers can make decisions by reading content
    - Based on 'element' (e.g. character / font height)
    - We use %Element Height: the height of an element (character / effective font size) in relation to the overall Image Height
  - Analytical Decision Making (= special systems)
    - Viewers can make decisions by seeing the finest detail displayed
    - Based on image resolution

Element height in practice

- ▶ PowerPoint is useful as it scales character height, unlike Word, Excel etc
- ▶ Let's take a look…

12-1% There are many types, sizes, and complexity levels of audiovisual systems. The user should apply this standard as appropriate to fit the particular project circumstances. Two common approaches are described here, although there are many possible variations in contractual agreements and relationships between the design and construction team. For example: Consultant-led projects when the monetary value of the audiovisual systems is high, the building design and construction timeframe is long, or the installation work must be competitively bid. Independent consultants are persons or firms having neither financial interest in the products specified nor obligations or partnerships with equipment integrators, contractors, manufacturers, and their representatives. Design-build projects (also known as turnkey projects) when the construction timeframe is accelerated, the installation systems are proprietary, and/or the project does not require competitive bidding. Professional AV integrator firms are in the business of selling, engineering, installing and providing ongoing service and support for a wide variety of audiovisual and related technologies, systems, and equipment. Equipment manufacturers may also provide turnkey systems design, installation, and service. In addition, owners may choose to have audiovisual systems designed and/or built by their in-house staff. InfoComm International® is the leading non-profit association serving the professional AV communications industry worldwide. Founded in 1939, the association has 5,000 members, including manufacturers, systems integrators, dealers and distributors, independent consultants, programmers, rental and staging companies, end users, and multimedia professionals from more than 80 countries. InfoComm offers industry expertise and market research serving press and others seeking information about the industry. Through activities that include tradeshows, education, certification, government relations, outreach, and information services, InfoComm promotes the industry and enhances members' ability to conduct business successfully and competently. InfoComm International is the ANSI Accredited Standards Developer (ASD) dedicated to the dissemination of the knowledge of audiovisual systems performance parameters. About ANSI The American National Standards Institute, Inc. (ANSI) is the national coordinator of voluntary standards development and the clearinghouse in the United States for information on national and international standards. An American National Standard implies a consensus of those substantially concerned with its scope and provisions. Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered and that a concerted effort be made toward their resolution. The use of an American National Standard is completely voluntary. Its existence does not in any respect preclude anyone, whether he or she has approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard. The purpose of this standard is to provide a description of the methods, procedures, tasks, and deliverables typically recommended or applied by professionals in audiovisual (AV) systems design and integration projects. The intention of the structure outlined in this Standard is to enable clients and other design and construction team members to assess confidently whether the responsible parties are providing the expected services. Modern AV systems have become increasingly complex and interconnected to other building systems such as network, electrical, HVAC and building automation/energy conservation. In many instances, AV systems provide critical operational functions for the owner, warranting a thoughtful and well-organized approach to commonly accepted planning, design, and integration procedures. In addition, the AV systems design and integration process may span and parallel a lengthy design and construction cycle, including input and review by many key personnel from divergent disciplines, trades, and backgrounds. This standard provides a practical guideline for defining the audiovisual system requirements and a clear accountability structure for the development and execution of the system design components. It provides a consistent reference for the project team from the initial design phase through construction, project completion, and building occupancy. This document is a Standard Practice Guide outlining design considerations and accepted procedures for accomplishing the task of integrating audiovisual systems into the design and construction of facilities in the built environment. This guide outlines a comprehensive set of procedures for the design and construction of professional audiovisual systems, and does not suggest a specific course of action. Qualified, experienced professionals are required to interpret,

24-2% There are many types, sizes, and complexity levels of audiovisual systems. The user should apply this standard as appropriate to fit the particular project circumstances. Two common approaches are described here, although there are many possible variations in contractual agreements and relationships between the design and construction team. For example: Consultant-led projects when the monetary value of the audiovisual systems is high, the building design and construction timeframe is long, or the installation work must be competitively bid. Independent consultants are persons or firms having neither financial interest in the products specified nor obligations or partnerships with equipment integrators, contractors, manufacturers, and their representatives. Design-build projects (also known as turnkey projects) when the construction timeframe is accelerated, the installation systems are proprietary, and/or the project does not require competitive bidding. Professional AV integrator firms are in the business of selling, engineering, installing and providing ongoing service and support for a wide variety of audiovisual and related technologies, systems, and equipment. Equipment manufacturers may also provide

36-3% There are many types, sizes, and complexity levels of audiovisual systems. The user should apply this standard as appropriate to fit the particular project circumstances. Two common approaches are described here, although there are many possible variations in contractual agreements and relationships between the design and construction team. For example: Consultant-led projects when the monetary value of the audiovisual systems is high, the building design and construction timeframe is long, or the installation work must

DISCAS keywords & terms

- %Element Height
- Acuity Factor
- Closest Viewer Distance
- Conforming Viewing Area
- Display Image
- Element
- Farthest Viewer Distance
- Horizontal Viewing Area

- Image Offset
- Vertical Viewing Factor
- Viewer
- Viewing Area Plan
- Viewing Height
- Viewing Ratio
- Visual Acuity

RELAX! - They're in the notes, plus definitions

DISCAS closest viewing positions
Vertical viewing angle

▶ Top of image < 30 deg° from eye position
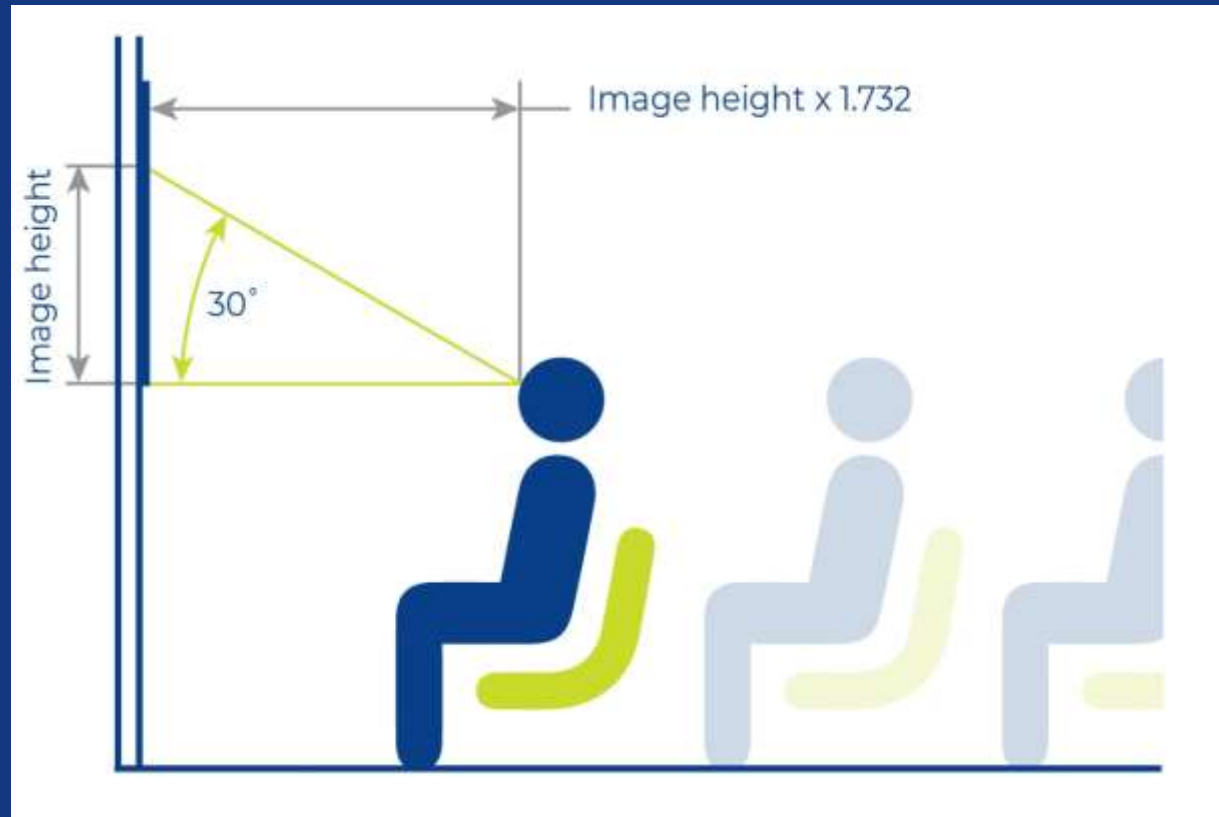
DISCAS closest viewing positions
Horizontal viewing angles

Combine top of image limit with horizontal viewing angle constraints
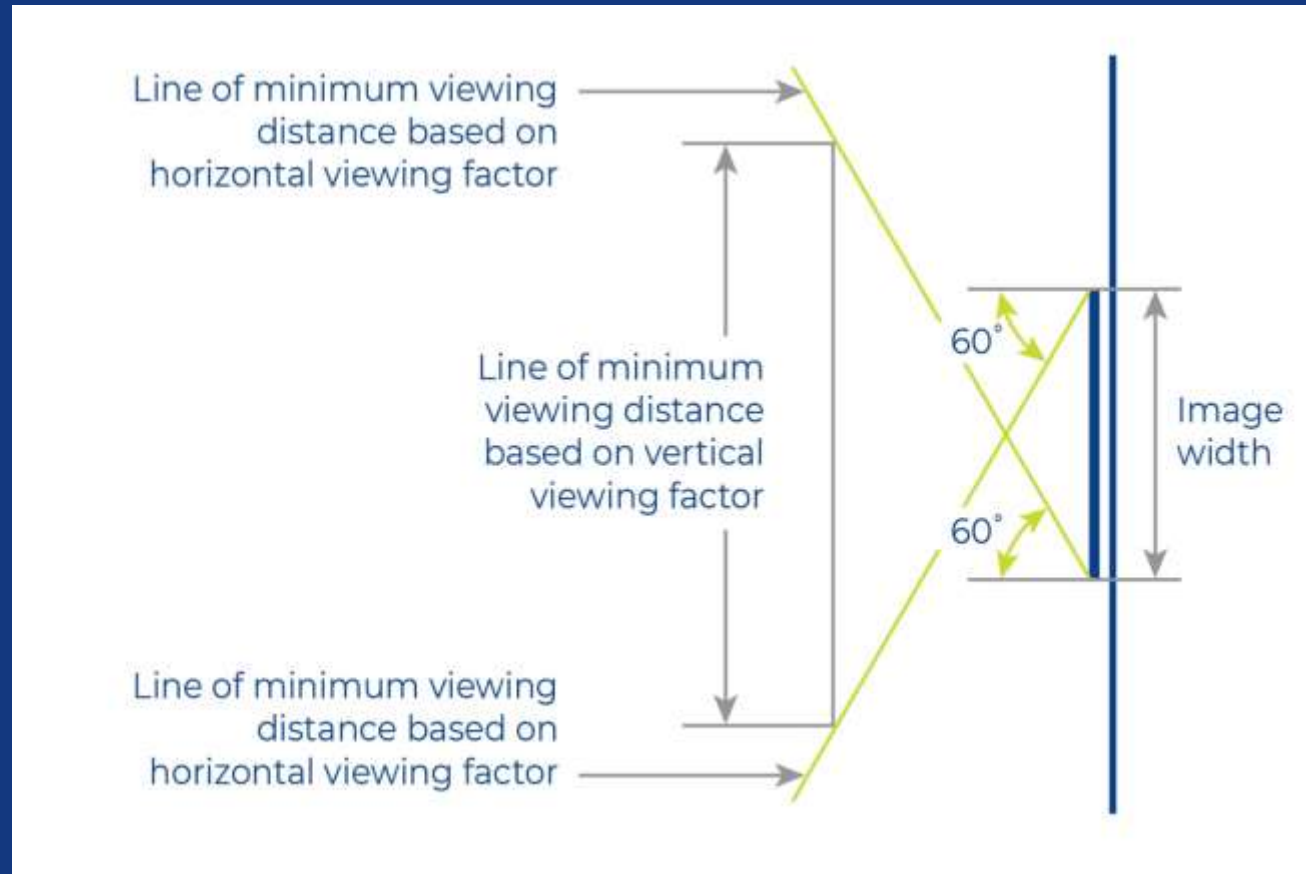
DISCAS Viewing Plan Example
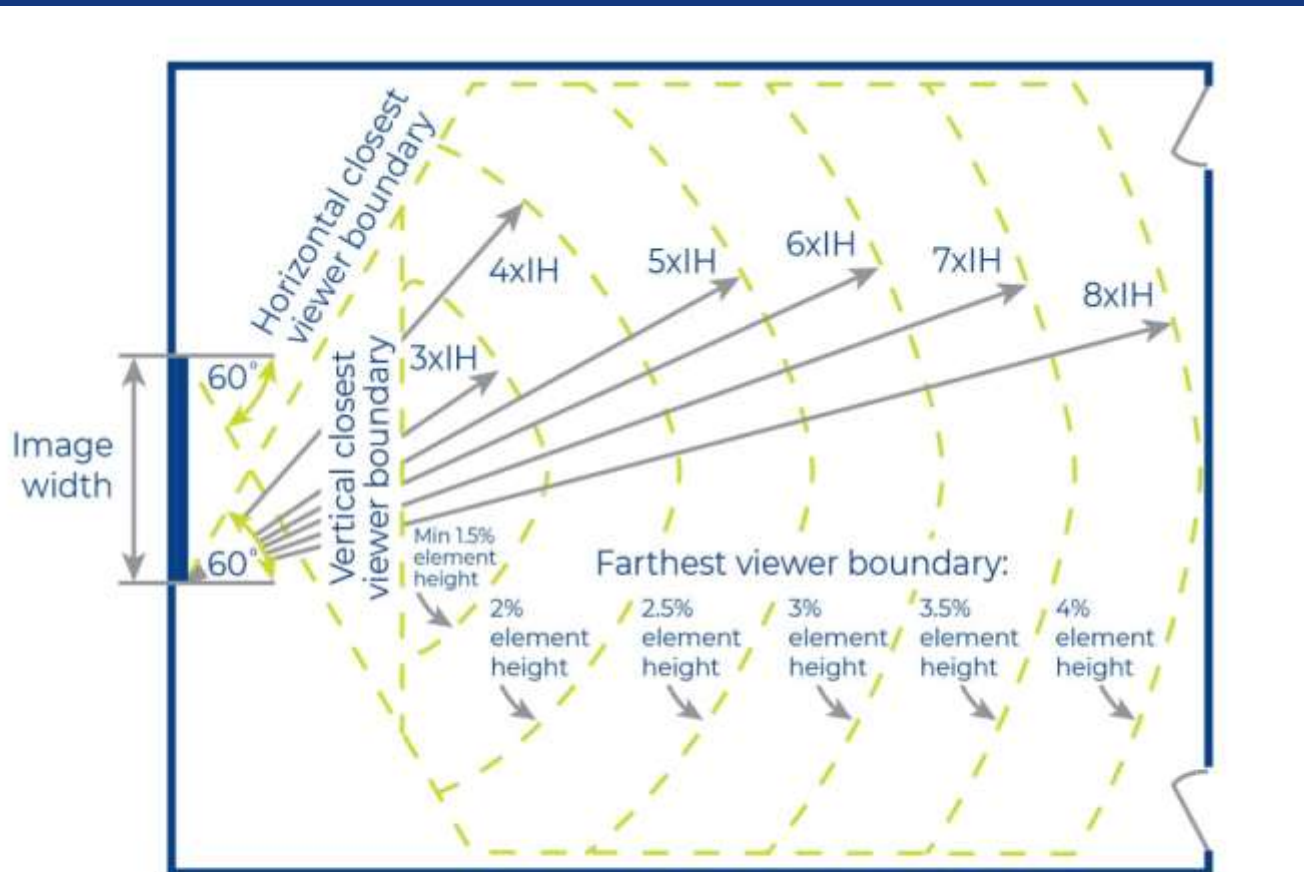
Viewing Parameters for BDM
No scale. IH = Image Height. Image Height based on 16:9 (1.78:1) aspect ratio.

DISCAS calculator

- ▶ Working calculator

- New app

3D CAD Model
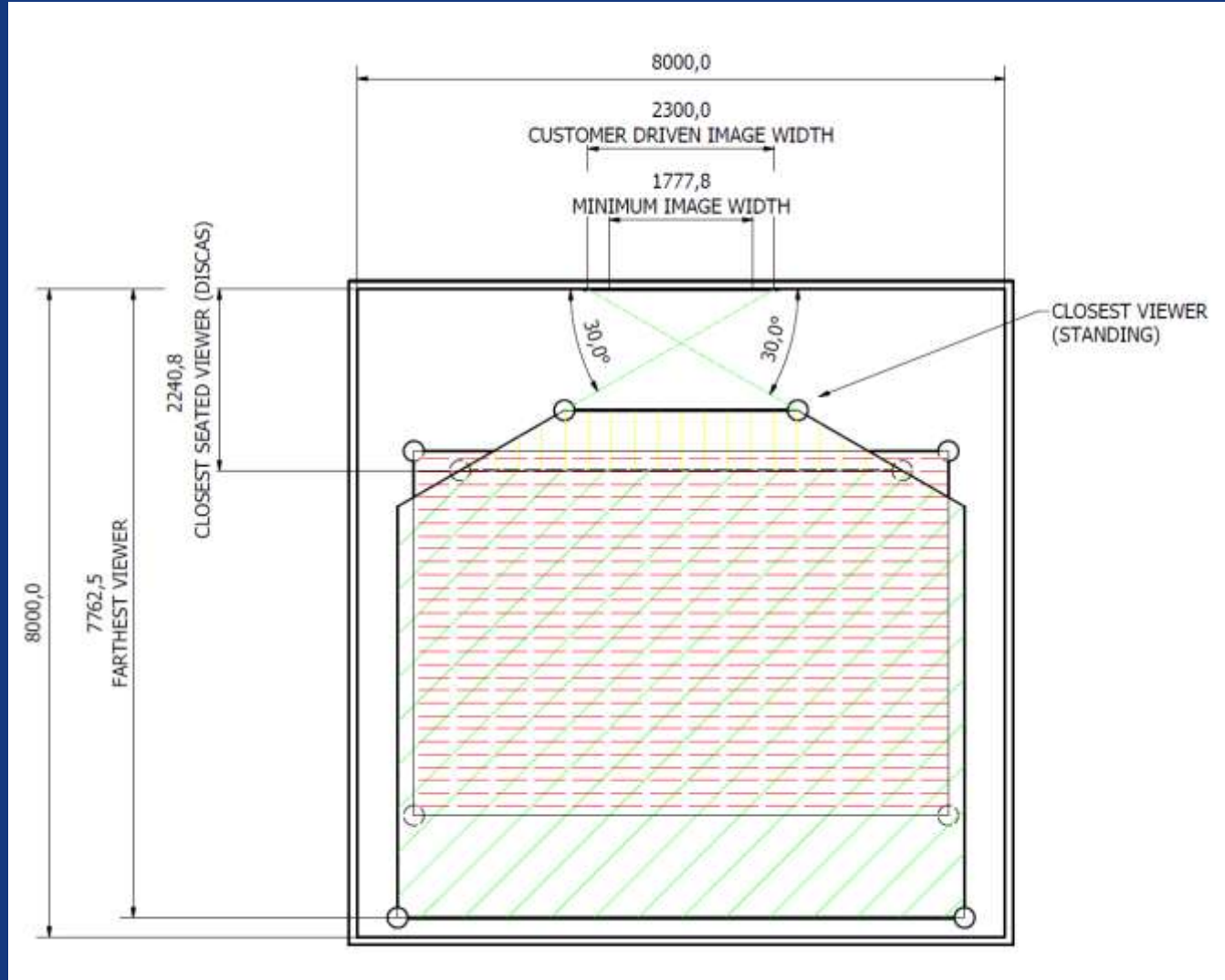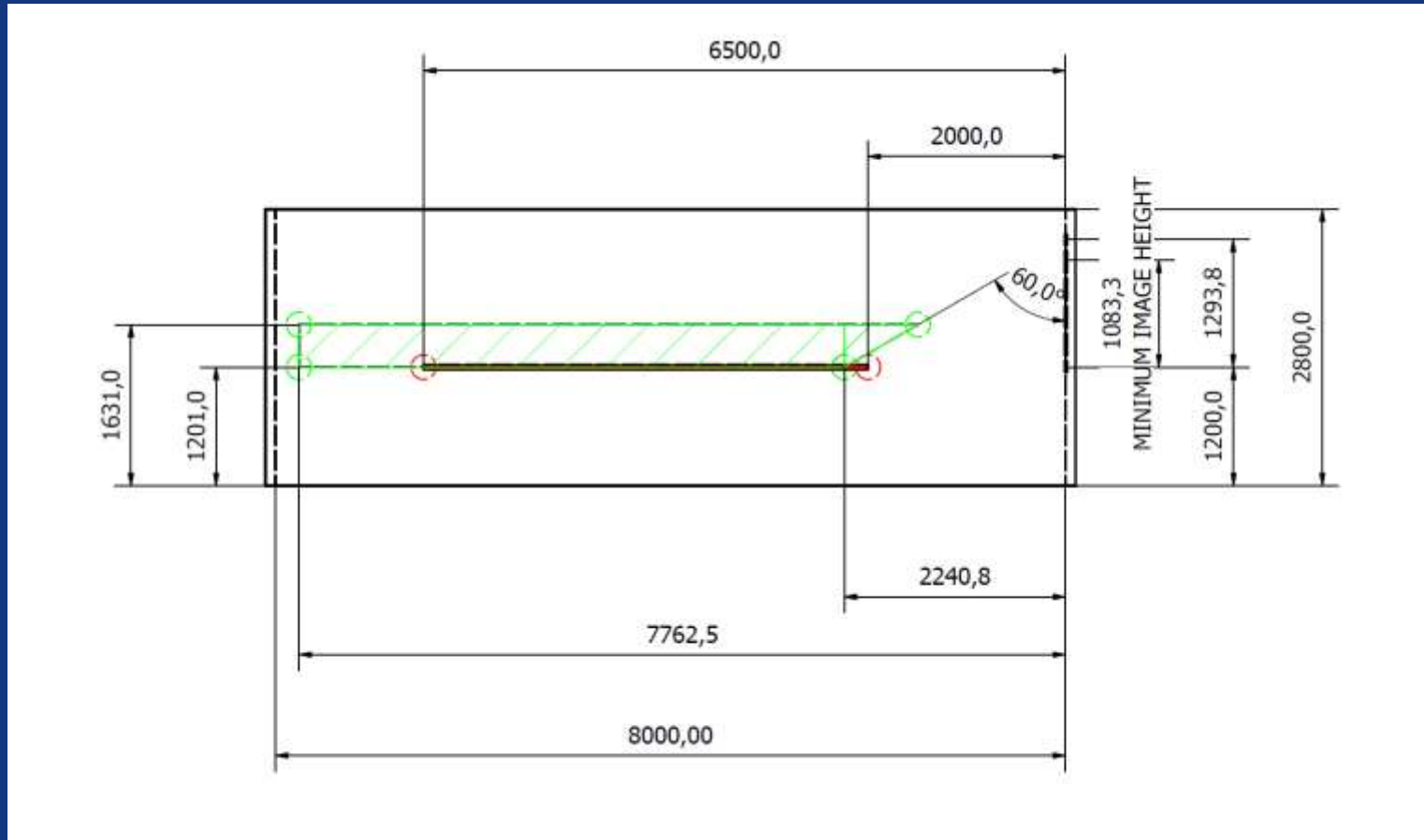
3D CAD Model

3D CAD Model
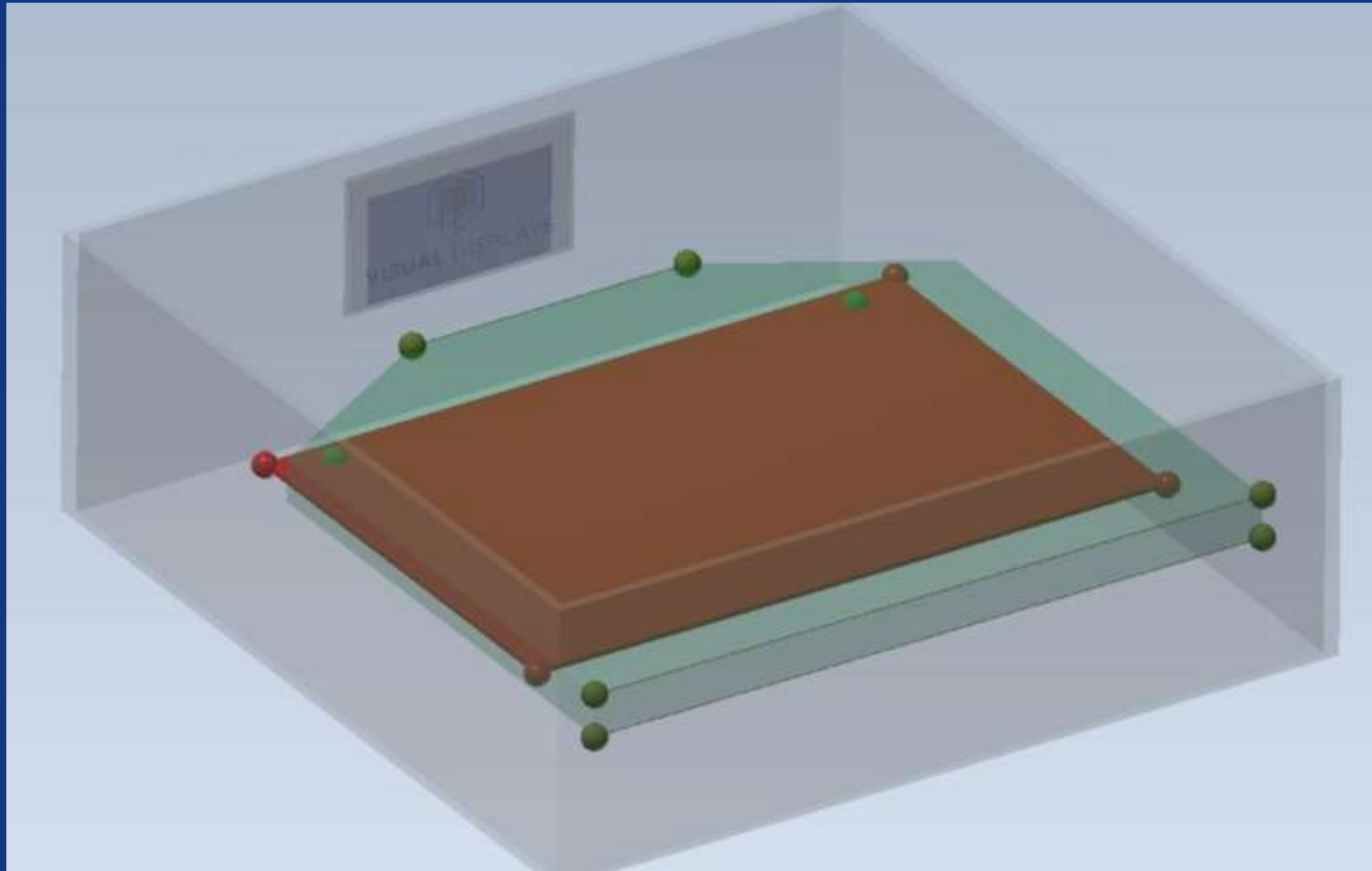
DISCAS take-aways

▶ Users generally need larger image sizes!

▶ Use 'hierarchy of need' in difficult scenarios

　　▶ EXAMPLE: Need for farthest viewer to see > closest viewer limit

▶ Standard based on image height

▶ Remember 16:10 (projection) is 8% higher than 16:9 (direct view displays) for any given image diagonal size.

　　▶ arguments for using projection…

▶ Make it work for you

▶ Use it to give guidance on existing systems

The DISCAS Standard is free!

▶ (To AVIXA members only, naturally!)

https://avixa.netexam.com/catalog.html?#:cs50547
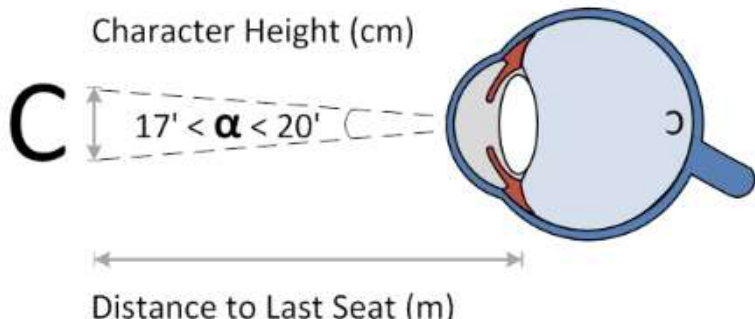
Great things are happening with DISCAS

▶ This Dutch professor has made a great online tool

▶ http://homepage.tudelft.nl/9c41c/Readability/ReadabilityTool4EducationSpaces.htm

One more thing…

▶ How bright should my image be?

Viewing distances & locations

Typical DISCAS plan
We'll look at this in depth tomorrow

Viewing Parameters for BDM

No scale. IH = Image Height. Image Height based on 16:9 (1.78:1) aspect ratio.
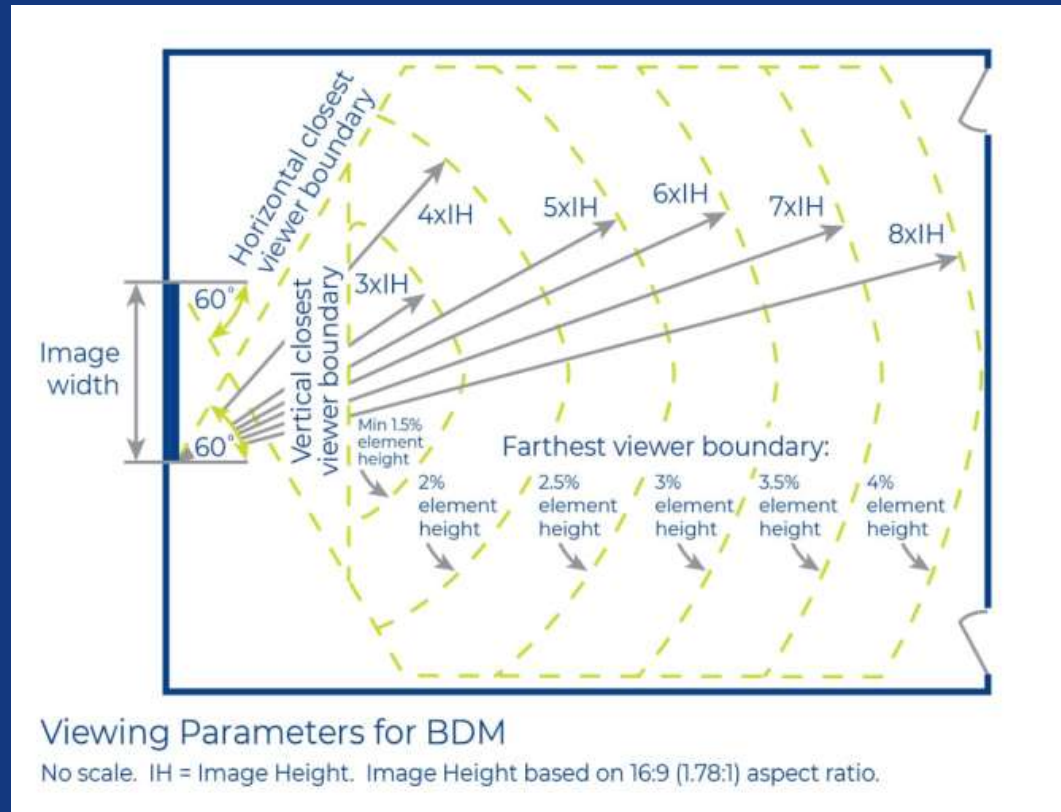
VISUAL DISPLAYS

Specialist manufacture, distribution, services.
Supporting HE framework integrators to excel.

DISPLAYS, LIGHT, ENVIRONMENTAL & STANDARDS EXPERTISE

Visual Displays Ltd

VISUAL DISPLAYS

Specialist manufacture, distribution & services

Working in partnership with & through the channel

▶ **Products**

- ▶ dnp Supernova ALR (ambient light-rejecting) projection screens
- ▶ Complete Epson laser display bundles – from 100" to any size
- ▶ Comprehensive projection screens, materials
- ▶ Immersive displays
- ▶ Bespoke display & mounting solutions
- ▶ Bespoke interactive displays
- ▶ Daylight control (blinds)

▶ **Services**

- ▶ Display design and specification
- ▶ Parametric 3D CAD design
- ▶ Expert tender response support and consultant liaison
- ▶ Space redeployment design for social distancing
- ▶ System troubleshooting
- ▶ Room surveys and audits (using meters & reporting to standards)
- ▶ Proof of concept
- ▶ Specialist consultancy

Ambient light rejecting screens
…best known for dnp Supernova

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dnp
Supernova
08-85

dnp
Supernova
20-25

Standard white
Da-Lite
gain 1

See full Gary
Kayye ISE
video here -
https://www.dnp-
screens.com/en/video/dn
p-ambient-light-rejecting-
screens-at-ise-2015/

https://www.dnp-screens.com/

Successful HE case studies

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- Southampton Uni with ProAV
- 3 x dnp Supernova Infinity
- 3 x EB-L1500UH
- *All over 15:1 contrast ratio*

Complete Laser Displays

Standards-compliant large screen displays
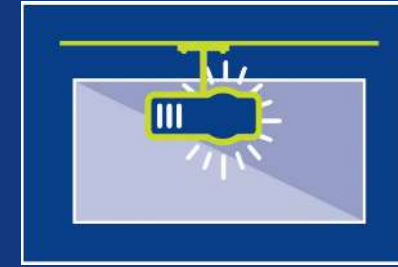
▶ Complete bundled packages, Epson projector (with warranty), dnp screen & Epson mount.

  ▶ 100", 110" & 120" with UST (e.g. EB-700U)

  ▶ 100" to any size with standard lens laser projectors

  ▶ Furniture & bespoke options available

▶ Option to buy complete displays as single SKUs

▶ Fraction of £cost/m^2 compared with LFD, dvLED etc

▶ *Available through all framework integrators*

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Specialising in the difficult!

VISUAL DISPLAYS
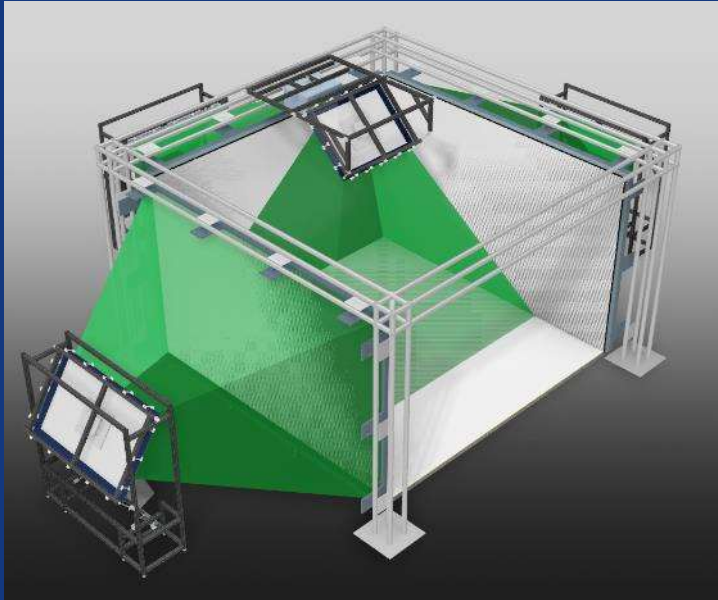
CAVES

MULTI-PROJECTION

CURVED SCREENS

LARGE SCREEN INTERACTIVE

IMMERSIVE, SIMULATION, AR, VR, CR etc

World-leading 3D CAD design and bespoke manufacture
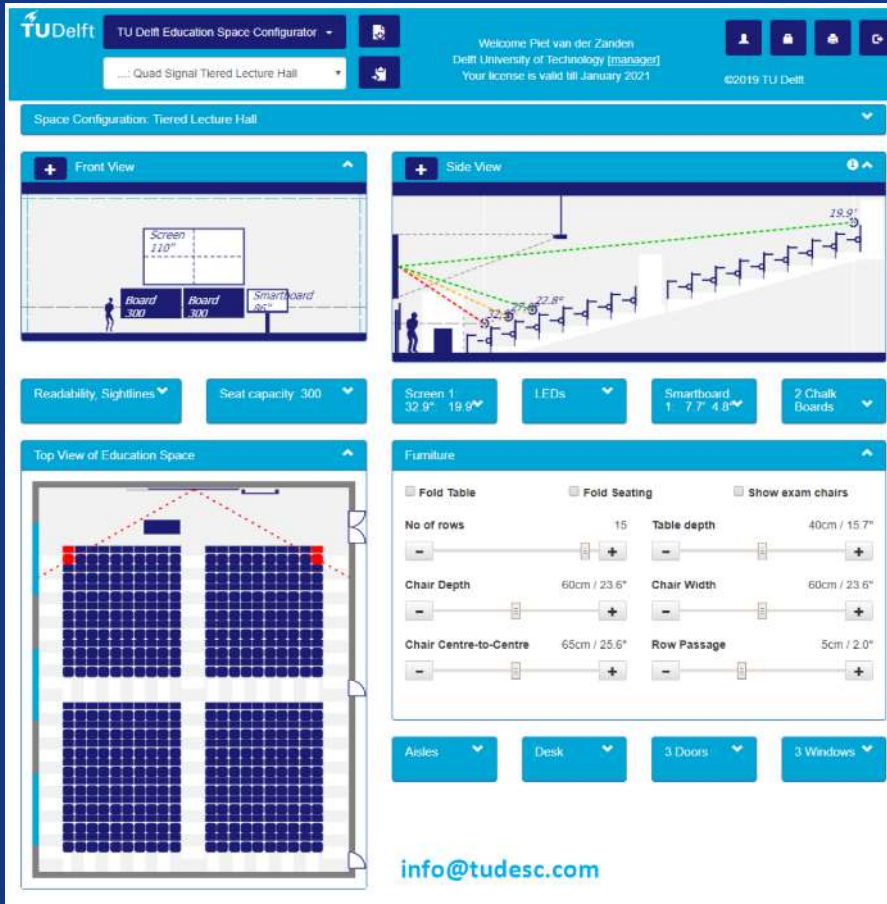
► We solve problems
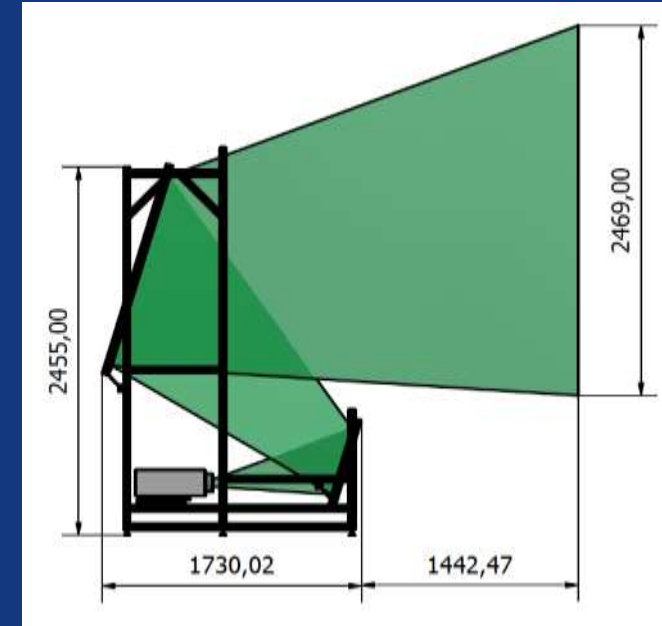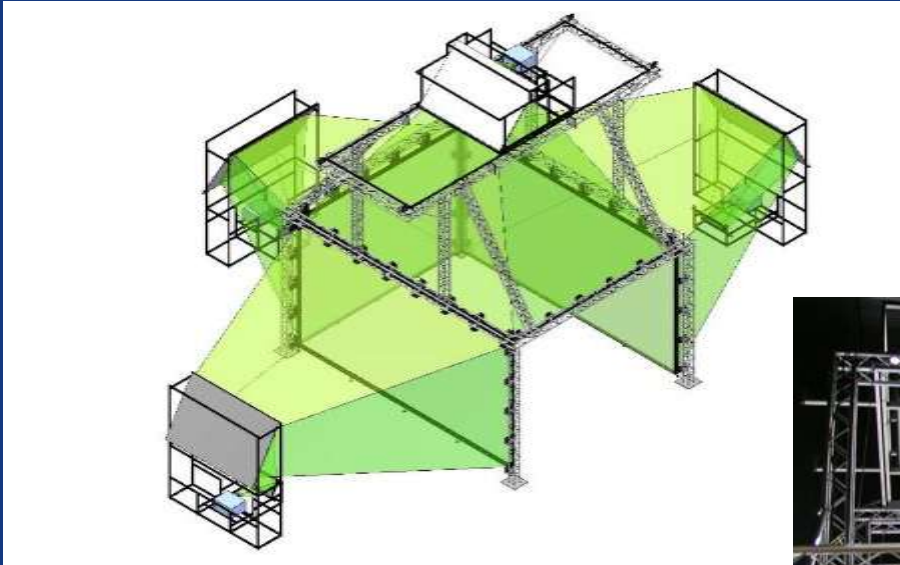
Social distancing space configurator
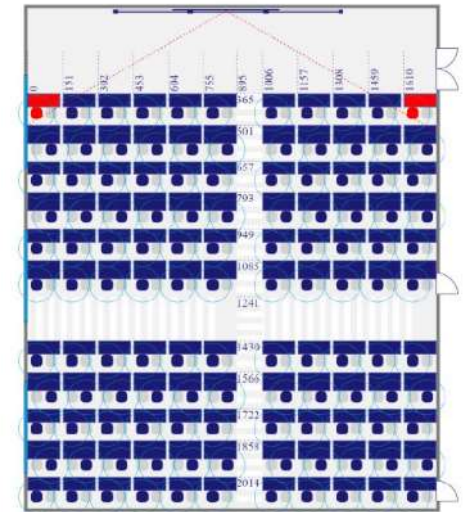## Complete space configuration and management

VISUAL DISPLAYS

Social Distance with normally generated Seat Capacity (56)
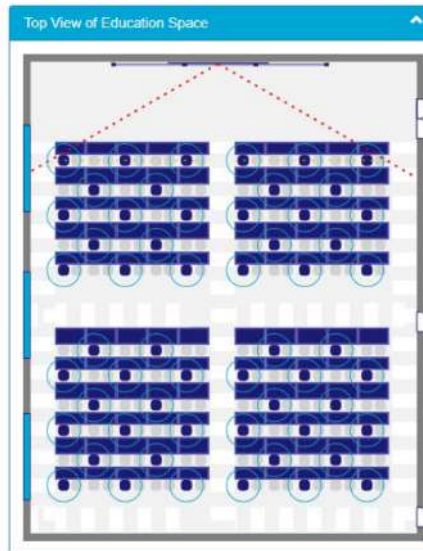
Social Distance with optimized Seat Capacity (121)
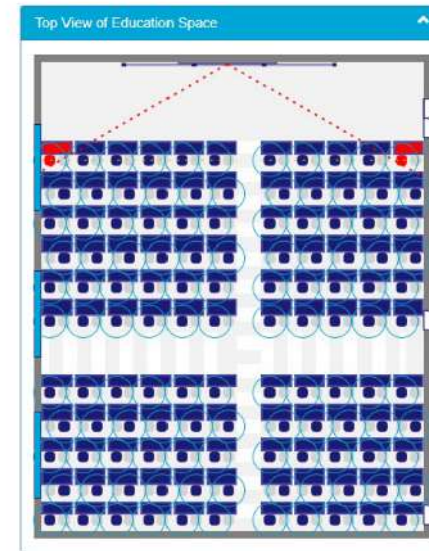
Printed detailed Floorplan for facility instructions

Q & A

www.visualdisplaysltd.com