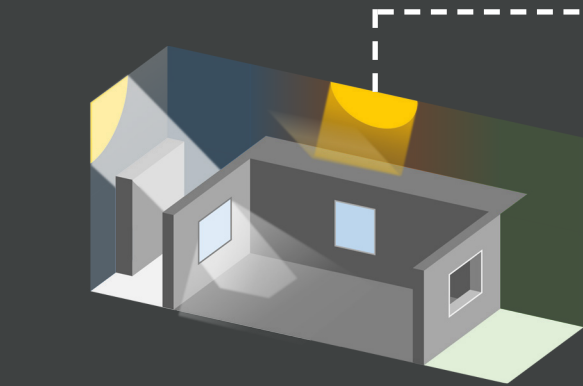


A QUIZ OF BUILDING PHYSICS IN ENVIRONMENTAL DESIGN

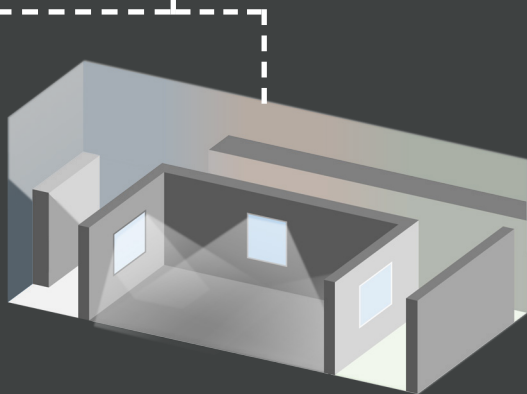
ABOUT THIS QUIZ

00

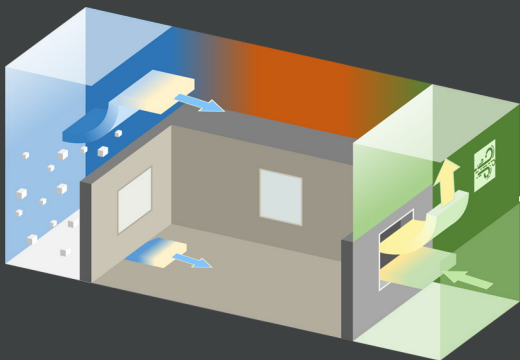
8 QUESTIONS, 4 PAGES ON THE FOLLOWING 4 TOPICS



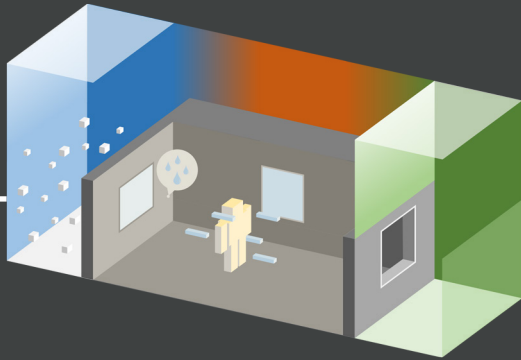
SOLAR ACCESS (Q1, Q2)



DAYLIGHT ACCESS (Q3, Q4)



NATURAL VENTILATION (Q5, Q6)

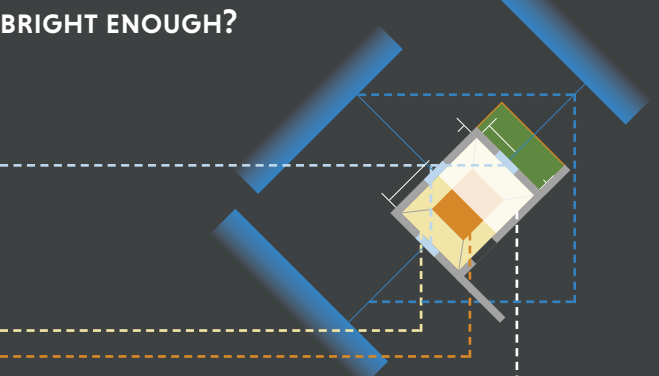
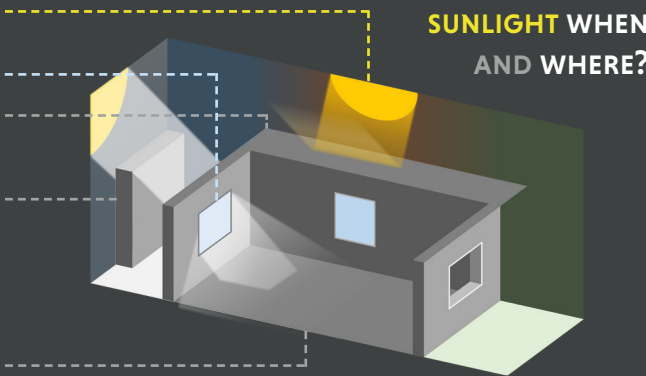


THERMAL COMFORT (Q7, Q8)

ON EACH TOPIC

1ST QUESTION ASKS YOU TO LIST THE INFORMATION THAT YOU NEED, TO UNDERSTAND THIS ASPECT OF A ROOM'S ENVIRONMENT

2ND QUESTION ASKS YOU TO MAKE A JUDGEMENT ON THIS ASPECT OF THE ROOM'S ENVIRONMENT BASED ON THE INFORMATION PROVIDED



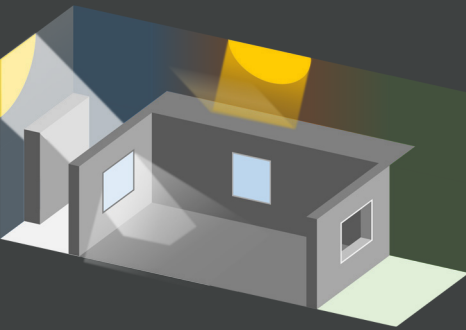
ABOUT YOU

STUDYING OR WORKING
ARE YOU  OR  ?

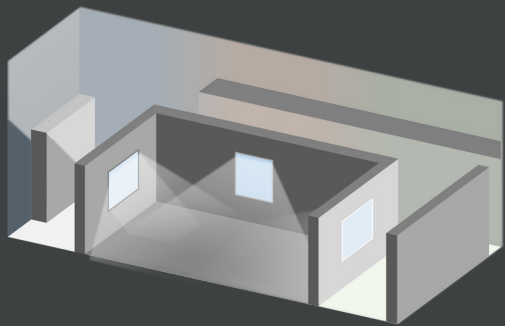
IN WHICH SUBJECT: AS A:

YEARS OF STUDY: YEARS IN THE INDUSRTY:

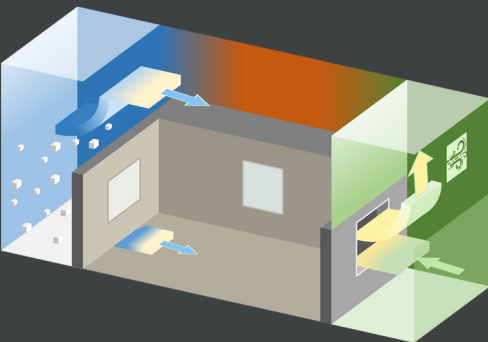
ARE YOU INTERESTED IN THE TOPICS COVERED IN THIS QUIZ?



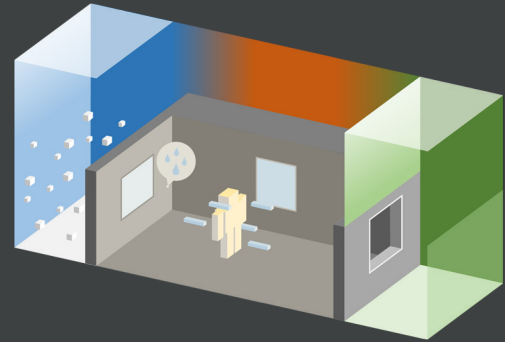
SOLAR ACCESS



DAYLIGHT ACCESS



NATURAL VENTILATION



THERMAL COMFORT

NO
A BIT
QUITE
VERY

NO
A BIT
QUITE
VERY

YOU ARE FREE TO CONSULT ANY RESOURCES TO ANSWER THE QUESTIONS,
BUT PLEASE KEEP DISCUSSION TO MINIMUM AND GIVE **YOUR** OWN ANSWER.

YOU ARE DESIGNING A HOUSE IN BATH, A CITY IN THE SOUTHWEST OF UK, AND YOU ARE REVIEWING THE SOLAR ACCESS OF A LIVING-DINING ROOM.

Q1: IN WINTER AND IN SUMMER, TO TELL WHEN IN A DAY AND WHERE INSIDE THE ROOM SUNLIGHT CAN REACH, WHICH INFORMATION DO YOU NEED TO KNOW ABOUT THE CITY, THE SITE CONTEXT, AND THE ROOM? PLEASE LIST THEM BELOW (SEPARATE EACH INFORMATION WITH A COMMA):

YOU ARE DECIDING THE LAYOUT OF THIS LIVING-DINING ROOM.

Q2: USE THE INFORMATION ON THE LEFT, WHICH LAYOUT WOULD YOU CHOOSE, THAT WOULD MEET THE CLIENT'S REQUIREMENTS?

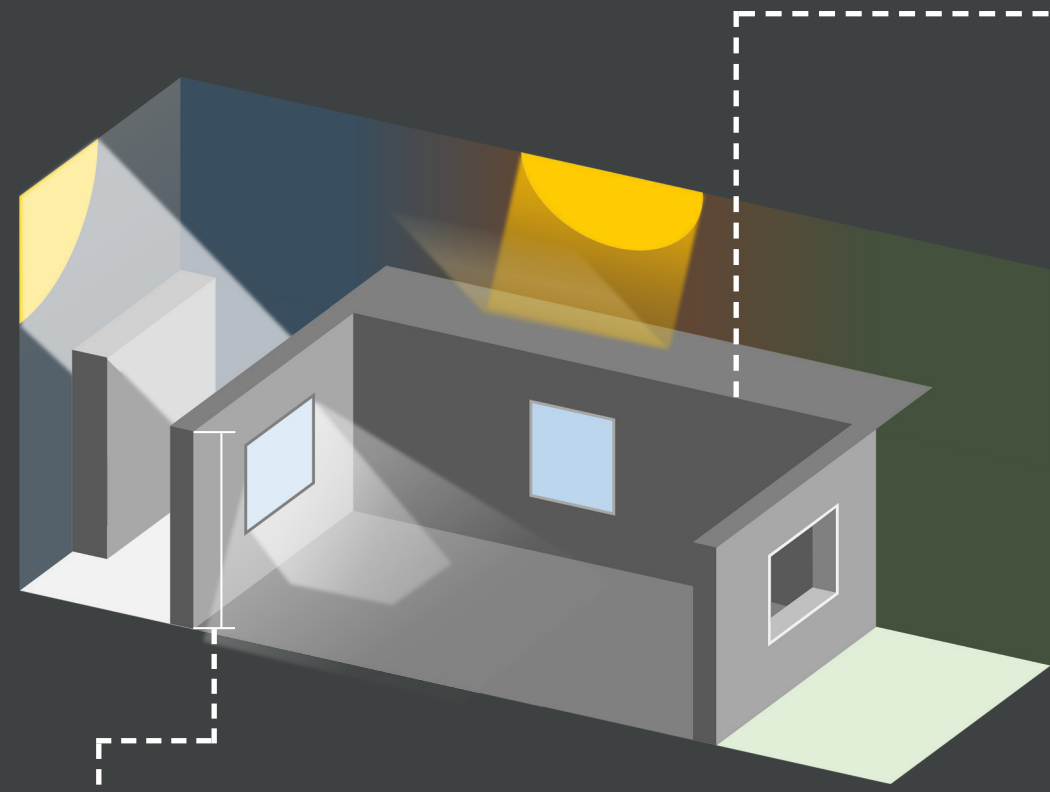
LAYOUT 1: LAYOUT 2: LAYOUT 3:

HOW CONFIDENT YOU ARE: LOW 1 - 2 - 3 - 4 - 5 - HIGH

PLEASE BRIEFLY EXPLAIN YOUR CHOICE:



BATH



FLOOR-TO-CEILING HEIGHT = 3.0M

WINDOW DIMENSIONS:
FOR ALL THREE WINDOWS

CILL HEIGHT = 0.8M

WINDOW WIDTH = 2M

WINDOW HEIGHT = 1.5M

CLIENT'S REQUIREMENTS:

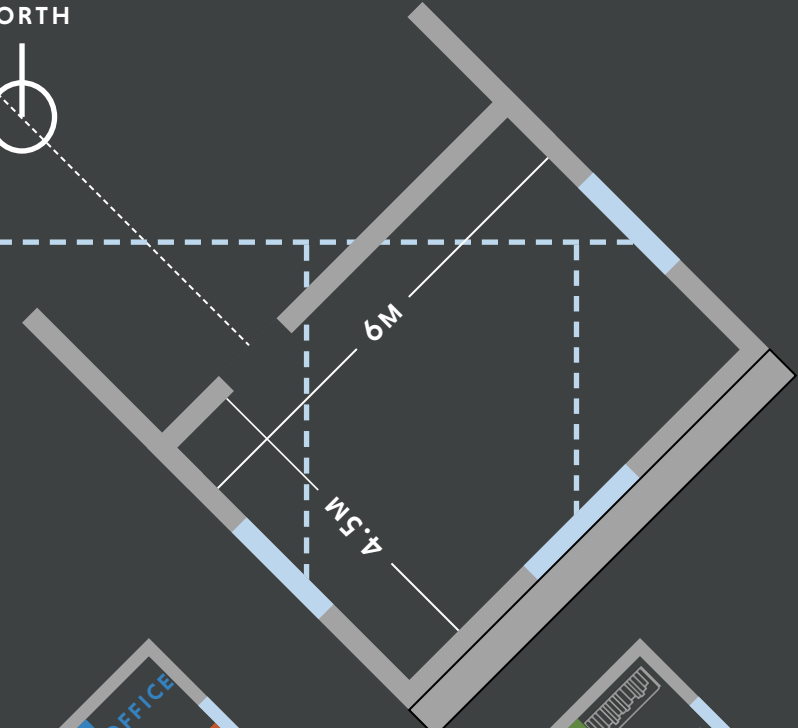
HAVE SUN NEAR THE SOFA IN MORNING / NOON, INCLUDING WINTER

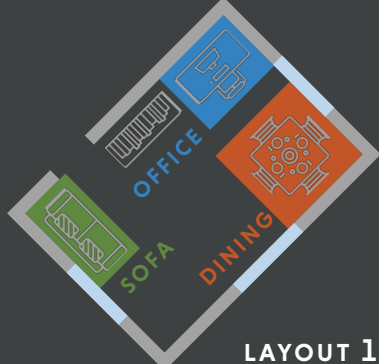
HAVE SUN OVER THE DINING AREA IN LUNCH TIME / AFTERNOON, ALL YEAR

NO / LOW DIRECT SUN NEAR OFFICE TABLE

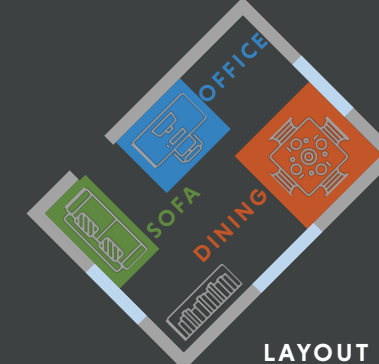
NORTH

45°

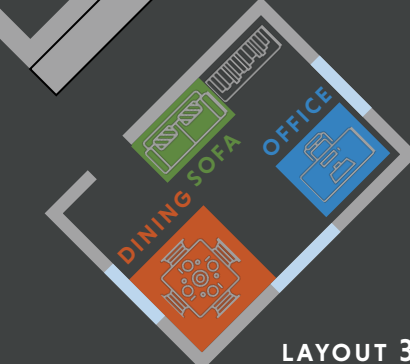




LAYOUT 1

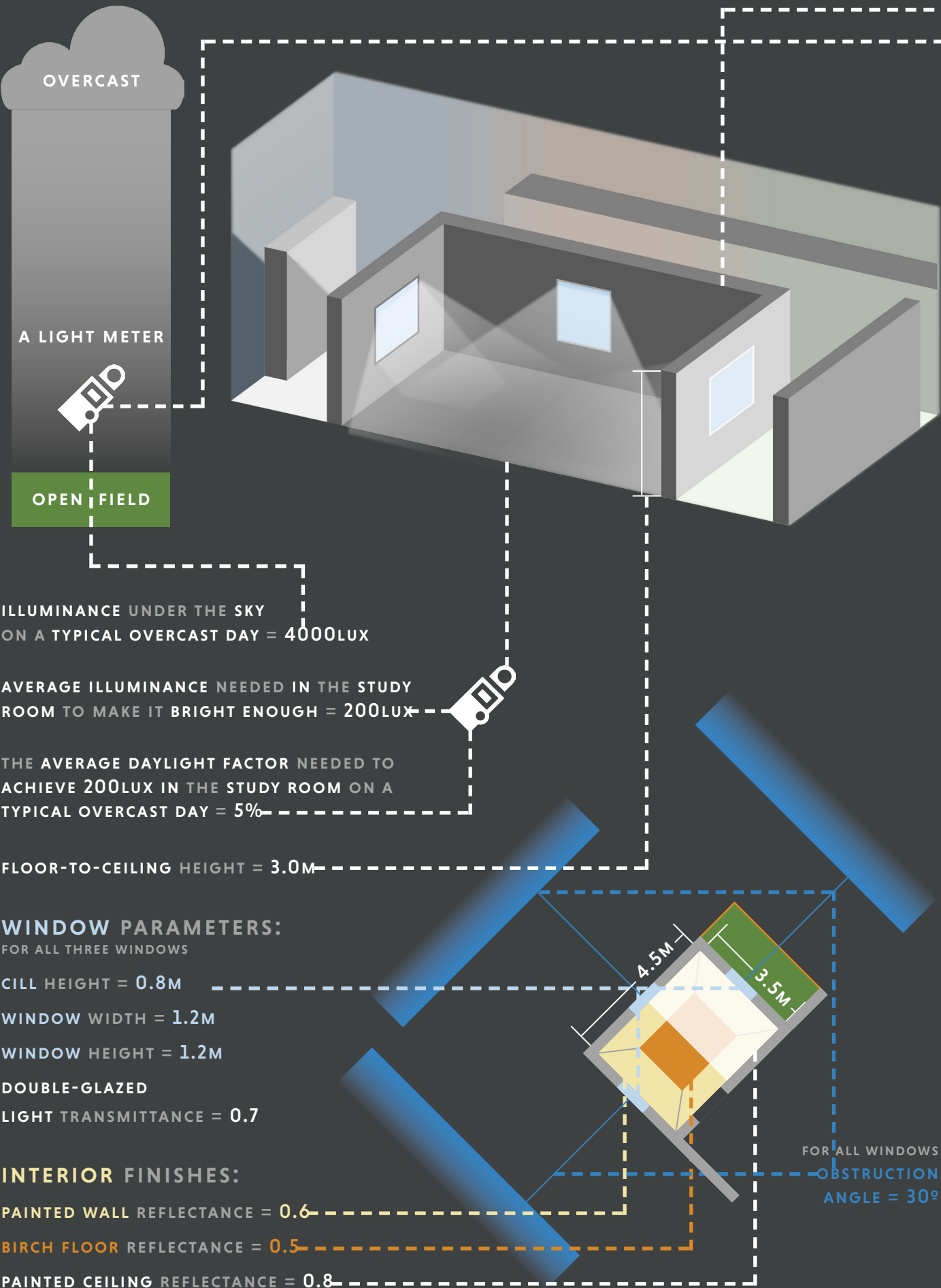


LAYOUT 2



LAYOUT 3

YOU ARE REVIEWING THE DAYLIGHT ACCESS OF A STUDY ROOM ON THE FIRST FLOOR OF THE SAME HOUSE IN BATH, UK.



Q3: ON A TYPICAL OVERCAST DAY, KNOWING HOW BRIGHT IT IS UNDER THE SKY IN AN OPEN FIELD, WHICH CHARACTERS AND PROPERTIES OF THE SITE CONTEXT, THE ROOM, AND ITS ELEMENTS DO YOU NEED, TO TELL HOW BRIGHT IT IS INSIDE THE ROOM? PLEASE LIST THEM BELOW (SEPARATE WITH COMMA):

YOU ARE CHECKING IF THE STUDY ROOM IS GENERALLY BRIGHT ENOUGH WITH ONLY DAYLIGHT ON A TYPICAL OVERCAST DAY.

Q4: USE THE INFORMATION ON THE LEFT, WOULD YOU EXPECT THE STUDY ROOM TO BE BRIGHT ENOUGH?

BRIGHT ENOUGH: NOT BRIGHT ENOUGH:

How CONFIDENT YOU ARE: LOW 1 - 2 - 3 - 4 - 5 - HIGH

PLEASE BRIEFLY EXPLAINE YOUR CHOICE:

THE HOUSE IS VENTILATED NATURALLY, AND YOU ARE CHECKING IF THE OPENINGS YOU PROVIDED FOR THE LIVING-DINING ROOM ARE SUITABLE.



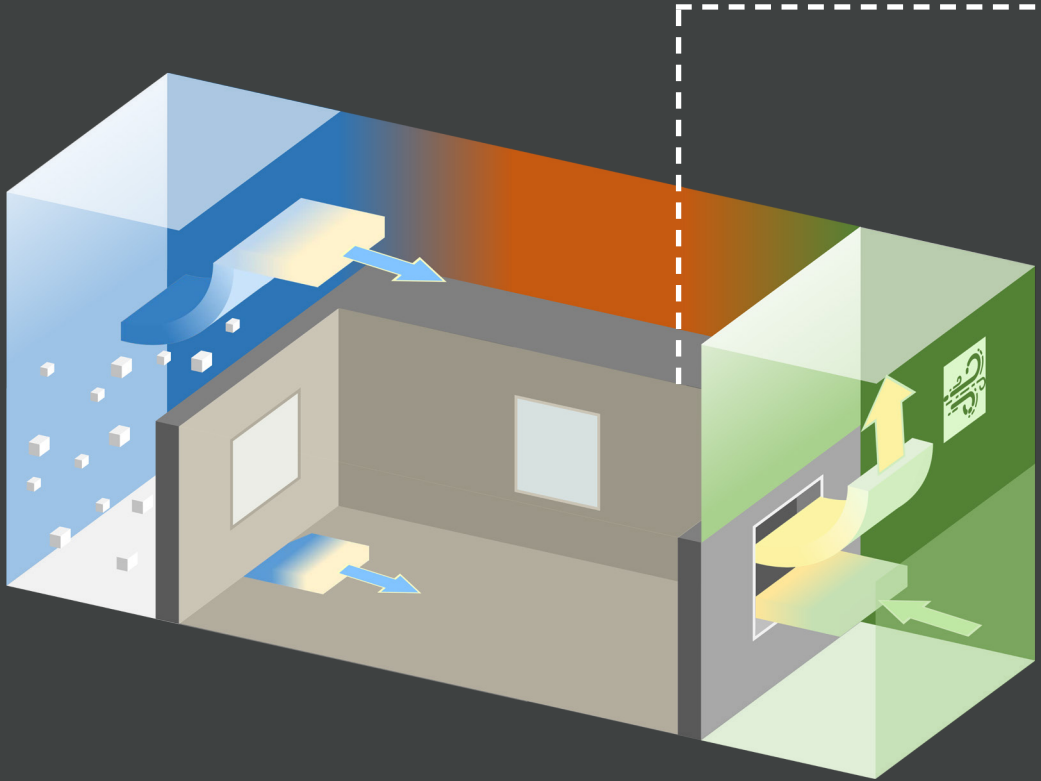
5 - 10 °C



TWO OCCUPANTS



18 - 24 °C



Q5: IN WINTER, THE OCCUPANTS KEEP MOST WINDOWS SHUT AND ONLY OPEN ONE SIDE WINDOW TO GET FRESH AIR. WHICH INFORMATION DO YOU NEED ABOUT THE ROOM AND THE OCCUPANTS TO ESTIMATE HOW MUCH FRESH AIR THEY NEED? PLEASE LIST THEM BELOW AND BRIEFLY DESCRIBE HOW YOU WOULD ESTIMATE THE AMOUNT OF FRESH AIR THEY NEED IN ONE HOUR:

SHELTERED FROM WIND

WIND = 0.2M/S

26°C

VENTILATION RELIES ON BUOYANCY / STACK EFFECT

24°C

VOLUME OF THE ROOM = 81M³

OPENING PARAMETERS:

- LOWER WINDOW OPENABLE AREA = 1M²
- HIGHER WINDOW OPENABLE AREA = 1.5M²
- STACK HEIGHT BETWEEN THE OPENINGS = 0.75M
- DISCHARGE COEFFICIENT OF OPENINGS = 0.65

HEAT TO BE DISSIPATED:

- FROM THE OCCUPANTS = 150W (75W x 2)
- FROM THE EQUIPMENT AND LIGHTING = 150W
- FROM THE SUN = 200W
- TOTAL AMOUNT OF HEAT = 500W

CAN THE OPENINGS ACHIEVE THE NEEDED VENTILATION FLOW?

VENTILATION FLOW NEEDED TO DISSIPATE THE TOTAL AMOUNT OF HEAT = 9.4 ACH = 211.5L/s

ON THE WARM DAYS IN SUMMER, THEY OPEN ALL OPENABLE WINDOWS TO MAKE THE ROOM COOLER.

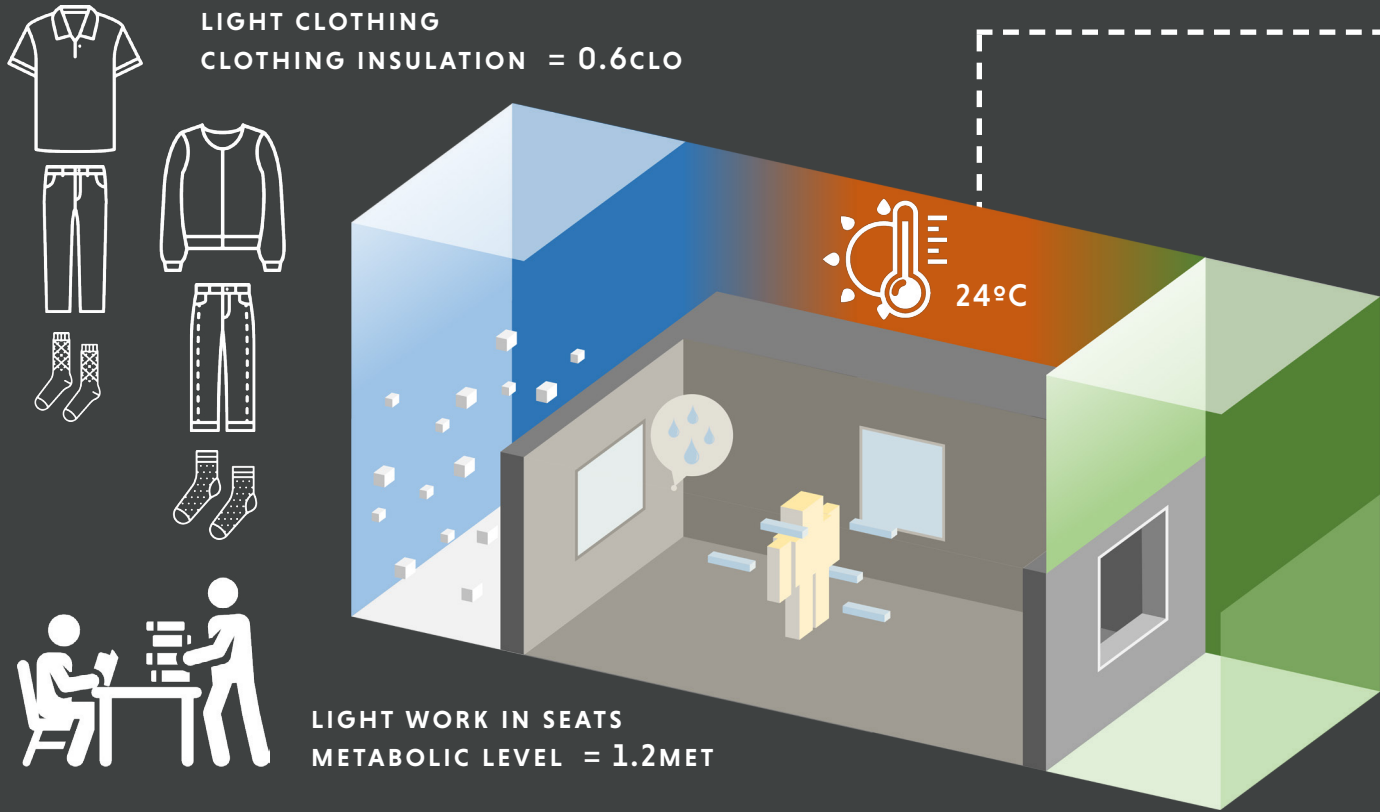
Q6: USE THE INFORMATION ON THE LEFT, WOULD YOU EXPECT THE VENTILATION TO BE SUFFICIENT TO DISSIPATE THE HEAT FROM THE ROOM?

SUFFICIENT: NOT SUFFICIENT:

How CONFIDENT YOU ARE: LOW 1 - 2 - 3 - 4 - 5 - HIGH

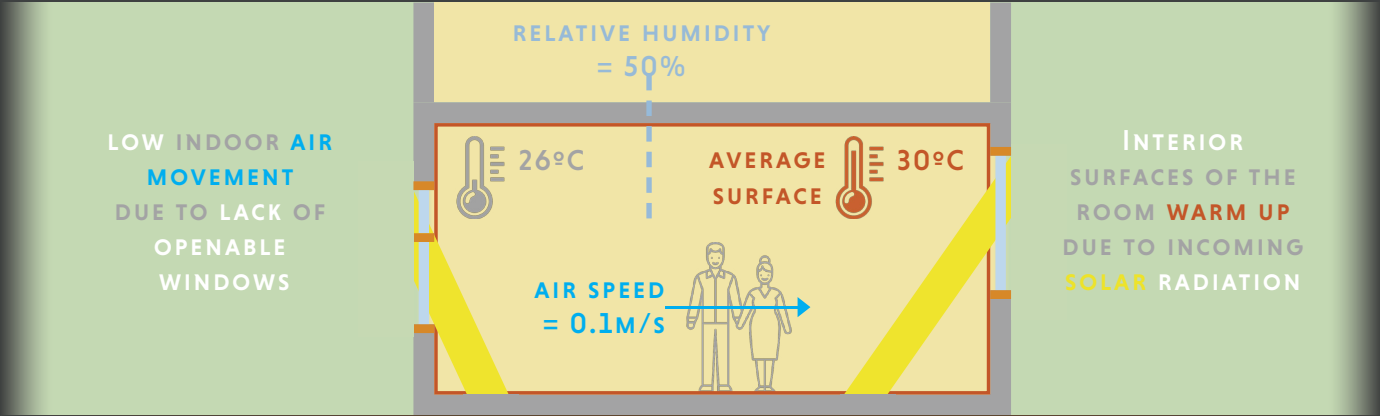
PLEASE BRIEFLY EXPLAINE YOUR CHOICE:

YOU ARE INVESTIGATING THE THERMAL COMFORT OF THE OCCUPANTS IN THE STUDY ROOM DURING THE WARM SUMMER DAYS OF UK.



Q7: KNOWING THE INDOOR AIR TEMPERATURE AND WHAT KIND OF ACTIVITY THE OCCUPANTS UNDERTAKE IN THE ROOM, TO TELL HOW COMFORTABLE THEY WOULD BE WITH THE CLOTHES THEY CURRENTLY WEAR, WHICH OTHER INFORMATION ABOUT THE INDOOR ENVIRONMENT DO YOU NEED TO KNOW? PLEASE LIST THEM BELOW:

NO SOLAR SHADING AND LOW AIR MOVEMENT - OVERHEATING PMV = 1.12 PPD = 31.4%



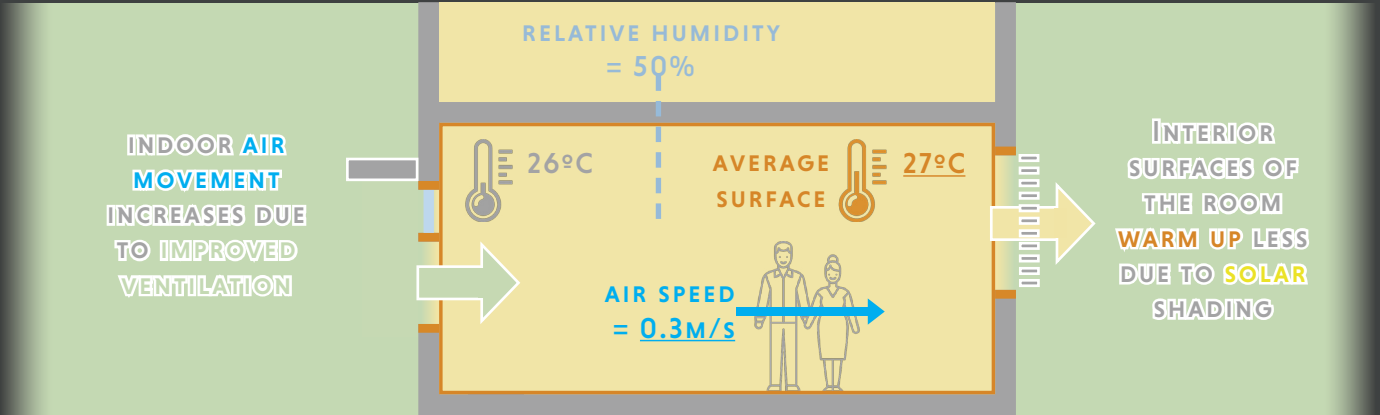
YOU ARE CHECKING IF THE SOLAR SHADING AND VENTILATION APPLIED FOR DEALING WITH OVERHEATING ARE EFFECTIVE.

Q8: USE THE INFORMATION ON THE LEFT, WOULD YOU EXPECT THE OCCUPANTS TO FEEL COMFORTABLE?

COMFORTABLE: STILL TOO WARM:

How CONFIDENT YOU ARE: LOW 1 - 2 - 3 - 4 - 5 - HIGH

SOLAR SHADING AND VENTILATION APPLIED - COMFORTABLE? PMV < 0.5 PPD < 10% IS CONSIDERED COMFORTABLE



PLEASE BRIEFLY EXPLAINE YOUR CHOICE:

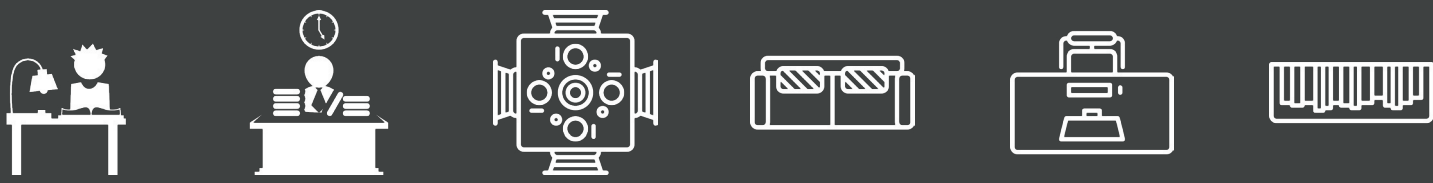
WE WANT TO HEAR **YOUR** SAY

ANY QUESTIONS?

ANY THOUGHTS TO SHARE?

ANY OTHER FEEDBACKS?

ICONS USED IN THE QUIZ



MADE BY [FREEPIK](#)



MADE BY [EPICCODERS](#)



MADE BY [HANNA](#)

MADE BY [OCHA](#)

FROM [FLATICON](#) LICENSED BY [CREATIVE COMMONS BY 3.0](#)