Politechnika Łódzka
Centrum Językowe

Olimpiada

V OLIMPIADA JĘZYKA ANGIELSKIEGO
Z ELEMENTAMI TECHNICZNYMI DLA SZKÓŁ ŚREDNICH 2024

ETAP FINAŁOWY

12 kwietnia 2024

Wypełnia Uczennica/Uczeń:

IMIĘ I NAZWISKO UCZNIA: _____ **KLASA:** _____

NAZWA SZKOŁY: _____

IMIĘ I NAZWISKO NAUCZYCIELA: _____

Wypełnia osoba sprawdzająca test:

ZADANIE	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	RAZEM
PUNKTY	5	10	15	5	10	7	10	8	15	15	100
ZDOBYTA ILOŚĆ											

Podpis osoby sprawdzającej: _____

Droga Uczennico! Drogi Uczniu!

Arkusz, który masz przed sobą, zawiera 10 zadań. Przeczytaj uważnie polecenia. Pamiętaj, żeby pisać czytelnie (długopisem lub piórem). Możesz pisać drukowanymi literami. Nie używaj korektora ani długopisu zmazywalnego. Odpowiedzi nanieś w miejsca do tego przeznaczone.

Pamiętaj, że brak wyboru odpowiedzi lub zaznaczenie większej liczby odpowiedzi będzie traktowane jako błędna odpowiedź.

Jeśli jeszcze nie wyłączyłaś/wyłączyłeś telefonu komórkowego, zrób to teraz.

Czas przeznaczony na rozwiązanie testu: **90 minut**.

Życzymy Ci powodzenia,

GOOD LUCK!

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Task 1. Listening comprehension 1 **_____ / 5 p.**

Listen to five people talking about problems related to tourist infrastructure in the UK, and for each speaker 1-5 choose their current focus of attention A-F. There are three answers that you do not need to choose. Write your answers A-F in the boxes. You will hear the recording twice.

The speaker is currently focusing on

A. monetizing their restoration and expansion efforts.	**Speaker 1**	
B. improving the existing transportation infrastructure.	**Speaker 2**	
C. reviving country skills while protecting rural areas.	**Speaker 3**	
D. raising overall standards in the hospitality industry.	**Speaker 4**	
E. restoring a local transport network due to congestion.	**Speaker 5**	
F. refurbishing rooms and redesigning local landscapes.		
G. attracting a new type of an outdoor-loving client.		
H. promoting sustainable and eco-friendly urban areas.		

Task 2. Listening comprehension 2 **_____ / 10 p.**

Listen to an excerpt from a podcast on keeping buildings cool in increasingly hotter temperatures. For each question 1-5 choose the best answer: a, b or c. For questions 6-10 mark each of the sentences as T (true), F (false) or NG (not given – if no information is provided in the recording). Write your answers in the boxes. You will hear the recording twice.

1.		Some conventional construction techniques, more appropriate for areas with higher temperatures,		
		a) are being modified by Anthony and other architects.	**b)** have seldom been utilized on a global scale.	**c)** have been taken over by some architectural and building design styles.
2.		Anthony's interest in architecture developed		
		a) owing to his desire to gain more knowledge of construction.	**b)** thanks to his design instructors from college.	**c)** through his observations of the built environment in Nigeria.
3.		As a pupil architect, Anthony was commissioned to work on the design of some buildings that		
		a) conformed with global 20th-century architectural norms.	**b)** featured a lot of glass due to the Nigerian climate.	**c)** were developed by firms that did not respect environmental regulations.
4.		Skylines of different cities on the west African sub-regional coast have a very similar appearance,		
		a) due to the applied standard modernist ornamentation.	**b)** as they are situated within the same climate zone.	**c)** because they have been designed using uniform architectural principles.
5.		Utilizing an internationally accepted corporate dress code in countries such as Lagos		
		a) helps employees cope with the given weather conditions.	**b)** makes the cooling load of the space used go up.	**c)** has nothing in common with the phenomenon called 'duplitecture'.

6.		Most urban skylines on our planet look very alike, as they have not developed organically.
7.		The host says colonialism has contributed to making regional building techniques obsolete.
8.		In fact, water is the only material which is globally used in larger quantities than concrete.
9.		Vyta Pivo's academic interests include the reasons for concrete omnipresence worldwide.
10.		Her view on concrete has shifted from pure admiration to heavy criticism over the years.

Task 3. Reading comprehension **_____ / 15 p.**

Read the article about construction materials for net-zero buildings.

a) Match each sentence A-K to one of the gaps 1-10. There is one sentence that you do not need to use. Write your answers in the boxes.

Emissions from buildings represent 39% of the global GHG emission. Reducing them in buildings will play a critical role to achieve net-zero by 2050 and meeting the Paris climate goals. **1._____**

Specialists in green building policy, climate science and architecture believe that realizing net-zero buildings is possible and that buildings are potential carbon sinks. **2._____** These are said to consume less energy during manufacturing, capturing, and storing carbon through photosynthesis.

3._____ Still, only a tiny percentage (3%) is now classified as green or uses bio-based materials that can lock emissions for decades. Data shows that increasing investment in green construction and energy-efficient buildings can help scale up and mainstream low-carbon materials industry, technologies, and operations.

Bloomberg's European headquarters has earned the title of the world's most sustainable office building. **4._____** Equipped with led lights integrated into the ceilings, natural ventilation, rainwater capture, treatment, recycling, and a combined heat and power system, the building uses 73% less water and 35% less energy than a typical office block.

Walmart's home office in Bentonville, Arkansas, is the largest mass timber campus project in the U.S. **5._____** Construction of the buildings will finish by 2025.

European firms like the German retail chain Alnatura use prefabricated loam in their HQ to meet passive construction standards. **6._____**

Hoffman Green Cement's "H-UKR" uses a new cement formulation made from blast furnace slag. **7._____** It is a by-product from steel production.

CalPlant sells MDF panes made from rice straws collected from farms within a 25-mile radius of its plant. **8._____**

Rustic Shingle, Metal Roofing System offers aluminium roof shingles made of up to 99% discarded aluminium cans.

USG's panels use 25% less water to manufacture than conventional gypsum wallboards. **9._____** Moreover, it weighs 25% less than typical wallboard, reducing transport energy.

Studies have shown that biobased materials can help alleviate climate change impacts. **10._____** Only by doing so will it ensure the maximum effect on reducing the buildings' carbon footprint and embodied carbon.

A. The project utilizes 1.7 million cubic feet of regionally-sourced lumber for the structures.	**1.**	
B. However, the building and construction sector should incorporate all available climate mitigation strategies.	**2.**	
C. It has one-fifth of the carbon footprint of the conventional binder but comparable compressive strength.	**3.**	
D. The product is also less energy- and resource-intensive.	**4.**	
E. Scaling up the application of bio-based building materials will help.	**5.**	
F. According to the company, this biomaterial performs similarly, if not better than wood-fibre based products.	**6.**	
G. It combines innovative engineering designs and materials to achieve high energy-efficiency.	**7.**	
H. Recycled high-density polystyrene used in their design is otherwise destined for the landfill.	**8.**	
I. The construction of new buildings is projected to double by 2060.	**9.**	
J. In pursuit of the same objectives, BMWs California EV showroom utilizes hemp wood for flooring.	**10.**	
K. This process will have to start with building or construction materials.		

b) For each definition 11-15 find a corresponding term in the text. Write your answers in the boxes.

11.		To make something start to be considered normal.
12.		Made off-site and ready to be put together quickly.
13.		A straight line joining the centre of a circle to its edge.
14.		Thrown away because of not being needed any longer.
15.		To make something bad such as problems or pain less severe.

Task 4. Working with words 1 **_____ / 5 p.**

Complete each of the sentences below with an appropriate preposition. Write your answers in the boxes.

1.		This is just a rough sketch, which is not _____ scale, not the technical drawing we asked for.
2.		In order to be recognized and gain popularity, an interior designer should think _____ the box.
3.		Not conforming with compulsory Health and Safety regulations goes _____ the grain nowadays.
4.		By unexpectedly withdrawing the project funding, they threw a monkey wrench _____ the works.
5.		To maintain the failing relationship with our subcontractor, we had to paper _____ the cracks.

Task 5. Working with words 2 **_____ / 10 p.**

Read the sentences below and fill each of the gaps with one of the given words. There are five words you do not need to use. Write your answers in the boxes.

rivets	**manhole**	**viscous**	**gravel**	**oscillating**
backdraft	**reciprocating**	**spandrel**	**transverse**	**beam-and-slab**
vision	**aggregate**	**adverse**	**bearing**	**injection**

1.		The ___ dampers used in the Millenium Pedestrian Bridge work like car shock absorbers.
2.		In this new geothermal power plant, cold water is pumped back down using ___ wells.
3.		The very handy ___ saw operates on the basis of the push-and-pull motion of the blade.
4.		Such standard ___ floors are sometimes cross-braced for increased lateral stability.
5.		We apply glulam ___ to provide stress distribution over a large area of a wood member.
6.		A steel ___ plate, placed under one end of a truss beam or girder, distributes the load.
7.		Opaque ___ glass is designed to help hide features between floors, such as vents or wires.
8.		In summary, we will need over 500 metric tons of the material to build the ___ driveway.
9.		Our maintenance workers can easily gain access to the sewer system through this ___.
10.		So, ___ cracks extend across a pavement at approximately right angles to its centre line.

Task 6. Language at work **_____ / 7 p.**

Read the sentences below and decide which answer (a, b, c or d) best fits each gap. Write your answers in the boxes.

1.		Luckily, I didn't sign the contract. Our surveying office would have gone bankrupt if I _____.			
		a) did	**b)** would	**c)** had	**d)** signed
2.		I was surprised they won the Sustainability Prize because their firm _____ considered due to fraud.			
		a) was not being	**b)** wouldn't have been	**c)** was not to be	**d)** wouldn't be
3.		Instead of wasting so much time trying to fix the air conditioning myself, I should have _____ it for me.			
		a) ordered Ben do	**b)** made Ben to do	**c)** had Ben to do	**d)** had Ben do
4.		Our site manager is bossy, but when you meet him, you should behave as if you _____ to me.			
		a) were talking	**b)** would talk	**c)** had been talking	**d)** talk
5.		As a rule, apply the Golden Rectangle while designing gardens, unless your PM _____ to use it.			
		a) doesn't tell you	**b)** has told you not	**c)** hadn't told you	**d)** will tell you not
6.		At last, when the breakdown had been dealt with, we _____ a coffee. It was totally impossible before.			
		a) had to have	**b)** could have had	**c)** might have	**d)** were able to have
7.		The idea _____ among honorary members of the Royal Architectural Society is really appealing to me.			
		a) to be counted	**b)** of being counted	**c)** of counting	**d)** to count me

Task 7. Word-formation **_____ / 10 p.**

Read the sentences below. Use the word given in capitals at the end of each line to form a word that fits in the given space.

1.		Some famous Gothic cathedrals had spacious interiors of _____ heights.	**PRECEDE**
2.		Contrasting lavish ornaments with modest forms is an example of _____.	**POSE**
3.		This hybrid structure combines an _____ frame with solid interior walls.	**SKELETON**
4.		_____ the foundations will stop the house from sinking into the ground.	**FORCE**
5.		Failing to notice the fire risk was a serious _____ on the contractor's part.	**SEE**
6.		The office's _____ silhouette features a single tower on just one corner.	**SYMMETRY**
7.		Consider taking precise measurements as a _____ of designing anything.	**REQUIRE**
8.		Postmodernism started as a _____ to Modernism and its stark designs.	**MOVE**
9.		If the main screw _____, the whole structure might suddenly fall apart.	**LOOSE**
10.		These road _____ are basically artificial slopes made of earth and stones.	**BANK**

Task 8. Transformations **_____ / 8 p.**

For each question below complete the second sentence so that is has a similar meaning to the first sentence, using the word given. Do not change the word given. You must use between two and six words, including the word given. Write your answers in the boxes.

1.	No matter what happens, you should never take off your hard hat at the construction site.	**UNDER**
	_____ take off your hard hat at the construction site.	
2.	I have yet to learn anything as cool as computer-aided design in building applications.	**HAVE**
	Computer-aided design in building applications is the _____.	
3.	Without John, I would've never managed to find a job in the renewable energy sector.	**FOR**
	If _____, I would still be looking for a job in the renewable energy sector.	
4.	Sheila's nomination for the Architect of the Year award came as a surprise to her.	**ABACK**
	Sheila _____ nominated for the Architect of the Year award.	
5.	Although we offer intelligent construction materials, clients rarely buy them.	**SPITE**
	_____ intelligent construction materials, our clients rarely buy them.	
6.	The firm had not sent me the required project documentation, so I was unable to proceed.	**BEEN**
	_____ the required project documentation, I was unable to proceed.	
7.	Local residents have been opposed to the demolition since 2020.	**DATES**
	Local residents' _____ to 2020.	
8.	Only when Ian retired did it become clear how much he had contributed to training our junior staff.	**EXTENT**
	It was not _____ of his contribution to training our junior staff became clear.	

1.		**5.**	
2.		**6.**	
3.		**7.**	
4.		**8.**	

Task 9. Technical elements 1 **_____ / 15 p.**

Complete the missing words in lines 1-15 below. The first letters of the words and the number of the letters (one underscore character = one letter) are given. Write your answers (full words) in the boxes.

1.		A **R** _ _ _ _ _ _ _ _ wall supports earth behind it, so the ground at the back is at a higher level.
2.		Specialists sometimes use the term rolled steel **J** _ _ _ _ (RSJ) to refer to I-sections in general.
3.		A three-dimensional **O** _ _ _ _ _ _ projection shows an object with one of its faces at the front.
4.		The members of the steel frame form a complex **L** _ _ _ _ _ _ featuring numerous triangles.
5.		Bolts attached to these base plates have their bottoms **E** _ _ _ _ _ _ _ in concrete (foundation).
6.		Polystyrene is an excellent thermal **I** _ _ _ _ _ _ _ _ often applied on external building walls.
7.		When timber is **M** _ _ _ _ _ _ _ _ _ _ _ stress-graded, its strength is tested by a special machine.
8.		An additive called a **P** _ _ _ _ _ _ _ _ _ _ is often used to make drier concrete flow more easily.
9.		There are **C** _ _ _ _ _ _ _ _ _ _ on the design – e.g., it mustn't exceed the maximum weight limit.
10.		Our automated houses feature **I** _ _ _ _ _ _ _ _ sensors that detect burglars and trigger alarms.
11.		A section of the sea-crossing bridge connecting two artificial islands is **S** _ _ _ _ _ _ _ _ in water.
12.		Tensile roof fabric is characterized by solar **T** _ _ _ _ _ _ _ _ _ _ _, so sunlight can pass through it.
13.		I need the **S**_ _ _ _ _ _ _ _ _ _ _ _ _ of the pipes – their length, diameter, and wall thickness.
14.		Routes going through mountainous regions do not include many flat **S** _ _ _ _ _ _ _ _ _ _ _ _.
15.		A **C** _ _ _ _ _ _ _ _ _ is a long bar fixed to a vertical support, used to hold a structure in place.

Task 10. Technical elements 2 **_____ / 15 p.**

Choose the best option (a, b, c, or d) for each gap in sentences 1-15 below. Write your answers in the boxes.

1.		Architects define a ___ dome as one resembling a sphere and made of a network of triangles.			
		a. geodesic	**b.** beehive	**c.** cloister vault	**d.** rotational
2.		___ windows, often installed in bedrooms or bathrooms, are typically vertical sliders.			
		a. Picture	**b.** Casement	**c.** Single hung	**d.** Awning
3.		The intelligent building material that can change its tint in response to temperature variations is called ___ glass.			
		a. thermoelectric	**b.** thermochromic	**c.** thermoformable	**d.** thermostatic
4.		Remember that ___ loads are weights of materials or components that are relatively constant throughout a structure's life.			
		a. live	**b.** static	**c.** structural	**d.** dead
5.		Used because of their high effectiveness, ___ piles are cast in concrete on-site. They are ideal for supporting bridges.			
		a. screw	**b.** aggregate	**c.** driven	**d.** bored
6.		___ steel, used as a strain device in concrete or masonry structures, can hold them together under high pressures.			
		a. Structural	**b.** Light gauge	**c.** Rebar	**d.** Mild
7.		In modern construction we can use an innovative material named ___ to cool the interiors of buildings.			
		a. Flexicomb	**b.** hydroceramic	**c.** Richlite	**d.** Concrete Canvas
8.		Suspension bridges, such as the Golden Gate in San Francisco, feature ___ that secure a cable at each of its ends.			
		a. anchorages	**b.** girders	**c.** abutments	**d.** stringers
9.		Tunnels with short lengths that are built to negotiate minor obstacles are classified as ___ tunnels.			
		a. off-spur	**b.** saddle	**c.** base	**d.** slope
10.		There was a substantial amount of ___ to be removed, so we hired trucks to transport the mud deposited by the river.			
		a. dross	**b.** grout	**c.** debris	**d.** sediment
11.		It is a temporary structure enclosing the construction area and keeping it in the dry. We call it a ___ dam.			
		a. buttress	**b.** coffer	**c.** diversion	**d.** saddle
12.		The property of a construction material to absorb water vapor from the air is referred to as ___.			
		a. absorption	**b.** permeability	**c.** hygroscopicity	**d.** hydrophilicity
13.		We all admired the historic Roman site with an impressive ___ consisting of a row of columns.			
		a. clerestory	**b.** basilica	**c.** colonnade	**d.** castrum
14.		___ vaults were often used in medieval buildings, but most prominently in Gothic cathedrals.			
		a. Ribbed	**b.** Flying	**c.** Grisaille	**d.** Tracery
15.		The crowded rectangular ___ surrounded by astonishing shops, bars and cafes made a lasting impression on everyone.			
		a. entablature	**b.** apse	**c.** belfry	**d.** piazza

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Task 1. Listening comprehension 1 / 5 p.
(Adapted from: *https://engexam.info/cae-listening-practice-tests/cae-listening-practice-test-4/4/*)

Speaker 1	**E**
Speaker 2	**D**
Speaker 3	**G**
Speaker 4	**C**
Speaker 5	**A**

Task 2. Listening comprehension 1/10 p.
(Adapted from: *https://theconversation.com/keep-buildings-cool-as-it-gets-hotter-by-resurrecting-traditional-architectural-techniques-podcast-190384*)

1.	**C**	6.	**NG**
2.	**A**	7.	**T**
3.	**A**	8.	**F**
4	**C**	9.	**T**
5.	**B**	10.	**NG**

Task 3. Reading comprehension / 15 p.
(Adapted from: *https://climateadaptationplatform.com/construction-materials-for-net-zero-buildings/* and *https://dictionary.cambridge.org/*)

1.	**K**	11.	mainstream
2.	**E**	12.	prefabricated
3.	**I**	13.	radius
4.	**G**	14.	discarded
5.	**A**	15.	alleviate
6.	**J**		
7.	**C**		
8.	**F**		
9.	**D**		
10.	**B**		

Task 4. Working with words 1 / 5 p.

1.	to
2.	outside
3.	against
4.	in/into
5.	over

Task 5. Working with words 2 / 10 p.

1.	viscous
2.	injection
3.	reciprocating
4.	beam-and-slab
5.	rivets
6.	bearing
7.	spandrel
8.	gravel
9.	manhole
10.	transverse

Task 6. Language at work / 7 p.
(Adapted from: *100 Testów z Gramatyki Angielskiej*, H. Krzyżanowski, Wydawnictwo Szkolne PWN, Warszawa 2000)

1.	**C**
2.	**C**
3.	**D**
4.	**A**
5.	**B**
6.	**D**
7.	**B**

Task 7. Word formation / 10 p.

1.	unprecedented
2.	juxtaposition
3.	exoskeletal/exoskeleton
4.	reinforcing
5.	oversight
6.	asymmetrical
7.	prerequisite
8.	countermovement
9.	loosens
10.	embankments

Task 8. Transformations / 8 p.
(Adapted from: *Second Edition Advanced Trainer Six Practice Tests*, CUP 2015)

1.	Under no circumstances should you (ever)
2.	coolest thing I have/I've (ever) learnt/learned
3.	it had not/hadn't been for John
4.	was taken aback by/at being
5.	In spite of being offered In spite of our/us offering
6.	Not having been sent
7.	opposition to the demolition dates back
8.	until Ian retired that the extent

Task 9. Technical elements 1 / 15 p.

1.	retaining
2.	joist
3.	oblique
4.	lattice
5.	embedded
6.	insulator
7.	mechanically
8.	plasticizer
9.	constraints
10.	intrusion
11.	submerged
12.	translucency / transparency
13.	specifications
14.	straightaways
15.	cantilever

Task 10. Technical elements 2 / 15 p.

1.	**A**
2.	**C**
3.	**B**
4.	**D**
5.	**D**
6.	**C**
7.	**B**
8.	**A**
9.	**A**
10.	**D**
11.	**B**
12.	**C**
13.	**C**
14.	**A**
15.	**D**

Audio scripts:

Listening 1 (total time: 08:23)

Speaker 1: Increased numbers of visitors would of course be a great benefit to the locality. My worry is though whether we have the infrastructure to cope. I'm not really concerned about the bed and breakfast sector. There's a certain amount of slack in the system. But what about transport? The railway line was removed twenty years ago, and the centre gets choked up with cars as it is in the summer, all queuing to go through the narrow medieval gateways which are a great photo opportunity but a nightmare for through traffic. Naturally the pollution levels are rising now from traffic fumes. Reinstating the railway connection would get my vote but it won't be easy.

Speaker 2: I think there are some wonderful places to visit around the country and it's my job to try and include them in our publications, particularly for our profitable export market. But it's all a bit piecemeal, isn't it? Take accommodation, for example. There are some pockets of excellence with great places to stay, run by friendly staff and serving interesting regional food. But you should see the pile of correspondence we receive from disappointed tourists. It's generally about the mismatch between price and quality. It's very hard to know what to recommend when we have to update our accommodation sections, especially in London. Quality across the board, that's the way forward!

Speaker 3: Well, I think we really need to aim to try to get as many tourists as possible. But we should start focusing on different groups. One of our key tasks has always been to gather information from overseas markets and feed it back to local tourist organisations throughout the country here so that they can develop products that suit. Currently we're thinking of marketing certain regions to the more mature, higher spending travellers who could come outside the summer holiday period, in order to extend the main tourist season. These travellers are primarily people who love historical buildings, gardens, walking and other activities which can be done in the spring and autumn.

Speaker 4: I think tourism can bring benefits if handled wisely. One scheme which is close to my heart is the regeneration of the rural economy. By promoting traditional crafts and setting up visitor's centres to see these in action, it would be possible to go quite a long way. But we need to consider the wider issues. For instance, what means of transport are all these people going to use to get here and where are they going to stay? Can we encourage only those who do the least damage? I fear that won't happen as short-term considerations always win. People fail to understand how difficult it is to reverse damage to our surroundings.

Speaker 5: In this business you can't stand still. We've done a lot to make the inside attractive and informative over the years, set up educational displays about everyday life five hundred years ago, redecorated the bedroom where Queen Elizabeth slept in 1570. We also restored the eighteenth-century kitchen to its former layout and we do cooking demonstrations for schoolchildren. This year it's the outside. I want to encourage families to pay to see our extended garden and zoo and the demonstrations of archery and medieval combat. To be profitable we really do need visitors to stay longer and spend more money in the gardens, shop and restaurant.

Listening 2 (total time: 13:23)

Gemma: In this episode, I've been exploring how certain styles of architecture and building design were exported all over the world. And in the process, they usurped traditional building techniques that are better suited to hotter temperatures. As we're going to hear, though, in this episode, some architects are trying to change that. And I wanna start the story with one of them, Anthony Ogbuokiri. Today Anthony is a senior lecturer in construction management at Nottingham Trent University in the UK. But he was born in Nigeria.
Anthony: South-eastern Nigeria, which is as tropical as it gets, if you like. And then I went through college, finding my path in the built environment, and my interest in knowing more about design and the making of buildings, making things generally. So, I was drawn to study architecture.
G: One of the things that I know you are interested in is how well a building is suited to its actual environment and the place it's built – the environment of where it's built. Tell me, when you were studying in Nigeria and working in practice, did you ever have to work on designing buildings that you knew just weren't suited to the climate of Nigeria?
A: Tell me about it. So, in my year out as a pupil architect working in firms, there were several, without mentioning names, there were several commissions where at that time you may have been involved in some drafting … and you'd be looking at the structure: it's an office block, it has lots of glazing. And each time you ask questions, common answers you get are, "well, the building was going to be air conditioned." You know, your environmental analysis senses would kick-in when you looked at your layout and they will tell you, well, this is going to be artificially lit and it's going to have ACs – definitely you're going to have to use mechanical systems.
G: Anthony was being asked to design a typical-looking concrete office block with big windows, a design that's become pretty much the international standard over the past century.
A: If you look at late-19th to early-20th century architecture when, if you like, the modernism movement came – it was moving away from ornamentation up to lightweight structures that achieved maximum values, especially on the commercial spectrum. This is typical what a high-rise building, office block on the skyline of a city, what it should look like. And that became almost like a template.
G: It's a template that's now being used around the world, no matter how hot or cold the climate.
A: So if you take a photo … There was an analysis I was doing with a colleague, and we're looking at developing countries particularly. If you just literally took a flight through the west African sub-regional coast – if you picked up Lagos, Accra, all the way to Dakar in Senegal, and round the block all the way to Tanzania, Kenya and East Africa – if you took different shots of the skylines, you couldn't tell the difference. You couldn't tell the difference. And yet within that journey, you would've come across various climatic conditions.
G: Anthony says it was the same when he compared an office tower in Lagos and one in Birmingham in the UK.
A: You couldn't say these two animals, where would they nest? And you would ask, why do they look almost the same? And you know exactly that one of them is out of place. And it makes it even worse when as a copy of that international style, everybody inside that building is dressed in black – in a formal, again what is considered the international corporate style. Here we are in the UK, I'm struggling wearing even a white shirt sitting next to a window. Imagine somebody in some office in Lagos, having a suit on top of this with a tie, and lots of that type sat in several tables. So, you're literally ramping up the cooling load even by behaviour – and, by the way, that culture was also a copied culture.
G: Anthony has a name for this kind of architecture: duplitecture. He says its roots lie in the legacy of colonialism.
A: Unfortunately, with the interruption of those societies through colonialism between the 18th century and a hundred years later when there was independence in 1960, you might argue that a hundred years of organic development was lost.
Dan: It's interesting to think about the places I've visited around the world where, now that I think about it, absolutely, so many of these skylines are really similar – it's kind of sad, right? I would've loved to see places built organically with their own local culture and heritage infused within the architecture because when you go see another giant apartment block, it looks the same as every other one I've ever seen. So it's an excellent point.
G: Yeah. And it does really just show this ideological and cultural power that former colonial countries have, and their architects have had on building styles around the world. And this idea that local methods just weren't modern enough, and so kind of got thrown out.
D: "Modern" is an interesting word to use there, because I imagine modern has to do with design, sure, but also materials, right? Like I'm thinking glass and concrete and steel and stuff.
G: Yes, you're right. It's concrete. Concrete is a really big part of this story.
Vyta: According to some statistics, concrete is the second-most consumed material on Earth after water.
G: This is Vyta Pivo. She's a post-doctoral scholar and assistant professor of architecture at the University of Michigan in the US. Her research focuses on the social and political history of concrete, and how it became such a ubiquitous building material around the world.
V: It took a long time for us to get there. And it wasn't just that it *became* this material. There's parties that were interested in making the material the most consumed material on earth.
G: Vyta used to think very differently about concrete than she does today.
V: I grew up in Lithuania so I was surrounded by concrete. But it had a very different kind of context – it was this medium of modernity, it was the future, it was the Soviet kind of utopia. Everyone wanted to live in a concrete tower because it meant you had proper facilities and kitchens and bathrooms and trash shoots. And it was a modern kind of living condition. Living in a concrete building meant living in the future.

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