

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ЗАПОРІЗЬКИЙ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ

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ПРОФЕСІЙНО-ОРІЄНТОВАНИЙ ПРАКТИКУМ ІНОЗЕМНОЮ
МОВОЮ

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магістра

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Навчально-методичний посібник призначений для здобувачів ступеня вищої освіти магістра спеціальності «Будівництво та цивільна інженерія» освітньо-професійної програми «Міське будівництво та господарство» для використання під час аудиторних занять.

Основною метою видання є формування англомовної професійно-комунікативної компетенції. До змісту включено теми, спрямовані на формування комунікативної компетенції в читанні та говорінні, розвиток умінь писемного мовлення, збагачення термінологічного словникового запасу.

У посібнику подано в систематизованому вигляді програмний матеріал дисципліни «Професійно-орієнтований практикум іноземною мовою». У виданні представлено теоретичний та практичний матеріал з 14 тем, об'єднаних у 4 розділи: Fundamentals of professional communication, Academic communication, Urban development innovations, Sustainable infrastructure management. Структура розділів уніфікована і включає теоретичний матеріал, автентичні тексти професійно-навчальної спрямованості, комплекс мовних і мовленнєвих вправ та завдання, що сприятимуть розширенню активного тематичного словника й формуванню комунікативних умінь писемного та усного мовлення.

Видання спрямоване на формування у майбутніх фахівців практичних навичок володіння англійською мовою в обсязі, необхідному для роботи з науковою літературою за фахом; навичок усного спілкування в професійній сфері в контексті окресленої тематики.

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ВСТУП

Курс «Професійно-орієнтований практикум іноземною мовою» є обов'язковою дисципліною в навчальному плані підготовки здобувачів ступеня вищої освіти магістра, які навчаються за освітньо-професійною програмою «Міське будівництво та господарство». Основним завданням курсу є формування навичок ефективної комунікації англійською мовою в академічному, науковому та професійному середовищі.

У результаті вивчення навчальної дисципліни студент повинен набути таких компетентностей та результатів навчання (знання, уміння тощо): *загальні компетентності* (здатність здійснювати та аналізувати інформацію з різних джерел; здатність використовувати іноземну мову для здійснення науково-технічної діяльності); *спеціальні компетентності* (здатність презентувати результати науково-дослідницької діяльності, готувати наукові публікації, брати участь у науковій дискусії на наукових конференціях, симпозіумах тощо); *програмні результати навчання* (застосовувати спеціалізовані концептуальні знання, що включають сучасні наукові здобутки, а також критичне осмислення сучасних проблем в галузі містобудування та господарства для розв'язування складних задач професійної діяльності; вільно спілкуватися іноземними мовами усно і письмово для обговорення професійних проблем і результатів діяльності, збирати необхідну інформацію, використовуючи науково-технічну літературу, бази даних та інші джерела, аналізувати і оцінювати її).

Для досягнення компетентностей студент повинен **знати:**

- базову фахову термінологію іноземною мовою;
- основні фахові міжнародні видання та науково-метричні бази даних із галузі будівництва;
- можливості використання їх інформативного потенціалу для проведення досліджень;
- правила складання наукових статей, анотацій, доповідей іноземною мовою;
- правила складання CV іноземною мовою;

уміти:

- володіти й вільно оперувати фаховою англословною термінологією;
- користуватися сучасними міжнародними академічними виданнями та спеціалізованими науково-метричними базами даних із галузі;
- користуватися сучасними спеціалізованими словниками з різних галузей науки і техніки;
- володіти електронними засобами перекладу як у режимі on-line, так і спеціалізованими програмними продуктами (Lingvo тощо);
- писати наукові статті іноземною мовою;
- складати особисте резюме та CV;
- складати анотації до кваліфікаційних робіт та наукових статей іноземною мовою;

- розробляти презентації до доповідей і виступити на науковій конференції;
- розуміти професійні і етичні стандарти діяльності, застосовувати їх під час діяльності у містобудівництві.

У виданні представлено теоретичний та практичний матеріал з 14 уроків, об'єднаних у 4 розділи: Fundamentals of professional communication, Academic communication, Urban development innovations, Sustainable infrastructure management. Тексти висвітлюють загальні та сучасні питання містобудування та господарства. Структура кожного уроку уніфікована і включає:

- теоретичний матеріал (що висвітлює проблеми науково-технічного перекладу, бізнес комунікації, складання технічної документації, граматичних труднощів технічних текстів, написання наукових статей, анотацій, створення презентацій. Після кожного теоретичного блоку студентам пропонуються питання для самоперевірки у тестовому форматі;
- практичний матеріал, мета якого полягає в опрацюванні теоретичних знань. Практичні завдання спрямовані на активізацію певного лексичного, граматичного матеріалу та розвиток іншомовної професійної компетентності у говорінні та письмі.

Поєднання теоретичного та практичного матеріалу уможливорює працювати як індивідуально, так і самостійно.

Використання технології скаффолдингу (методики підтримуючої дії) сприяє ефективному вивченню англійської мови студентами немовних спеціальностей. Посібник надає вичерпні пояснення та ілюстративні приклади для кращого розуміння матеріалу та виконання завдань. Крім того, він містить чіткі алгоритми для послідовного виконання завдань, допомагаючи студентам систематизувати свої знання та навички.

Також, студентам запропоновано приклад підсумкового тесту з дисципліни, який є зразком залікового тесту на платформі Moodle. Тест акумулює знання і навички з вивченої дисципліни.

Як додаток до видання включено англо-український словник термінів із містобудування та господарства, необхідних для розуміння текстів видання. Окрім того, додаток містить список наукових кліше для написання анотацій до фахових статей та власне статей. Викладення матеріалу ґрунтується на принципах методики CLIL.

CHAPTER 1. FUNDAMENTALS OF PROFESSIONAL COMMUNICATION

UNIT 1. CAREER



THEORETICAL PART

FUNDAMENTALS OF TECHNICAL TRANSLATION

Read and check your understanding.

Technical translation is a type of translation that deals with technical content transferred from one language to another. Such content includes documents, manuals, instructions, patents, software, and other materials that require specialised subject-matter knowledge. Accuracy is crucial in technical translations, as even a minor error can have severe consequences in fields such as engineering, medicine, and law.

While quality and accuracy are always a priority in any translation project, they take on an even greater role when it comes to technical translations. This is because small inaccuracies can have serious consequences: fines, lawsuits, public embarrassment, or even patent rejection, with the subsequent inability of the company to continue operating in that market.

In other words, with technical translation, compliance and corporate responsibility are tightly linked to the quality of the technical translations that the company produces. Every speciality in technical translation has its own prerequisites and specialised terminology, requiring a highly qualified and experienced team of linguists familiar with the field.

In the case of intellectual property rights (IPR), which include patents, copyrights, trademarks, trade secrets, licensing, and unfair competition, for example, translators need to master a particular and highly regulated language. They also require interdisciplinary knowledge as they have to be familiar with aspects of technology, business, economy, and law.

Technical translation involves translating technical documents, such as user manuals, technical reports, and instruction manuals. These documents often contain highly technical and specialised terminology that requires an in-depth understanding of the subject matter. As such, technical translators are often highly skilled and specialised professionals with expertise in a particular field.

The use of technical translation in technical education has numerous benefits. It helps students access information previously unavailable to them due to language barriers. This, in turn, increases the quality and relevance of the education they receive, making them better prepared for the global workforce.

Requirements for technical translation:

Accuracy: Technical translation requires precision and accuracy to ensure the translated document conveys the same meaning as the source text. Technical translations must be reliable and trustworthy, as any translation error could lead to misunderstandings, errors, or accidents.

Quality: Technical translation requires specialised knowledge, vocabulary, and experience. A professional technical translator is trained to understand the

nuances of technical language and can provide accurate and high-quality translations.

Speed: Technical translation projects are time-sensitive and require a quick turnaround. A professional translator with technical expertise can work efficiently to deliver translations promptly.

Compliance: Technical translation projects must adhere to industry standards, regulations, and legal requirements. A professional translator with technical expertise can ensure compliance with all relevant standards and regulations.

ChatGPT for technical translation.

ChatGPT, while powerful for general language tasks, has limitations that make it often inappropriate for technical translation in professional or critical contexts. Here's a detailed breakdown:

1. Accuracy and Precision

Technical translation requires precise terminology, especially in fields such as engineering, medicine, or law. ChatGPT may misinterpret or generalise terms, producing translations that are linguistically correct but technically inaccurate.

Example: Translating “torsional rigidity” incorrectly as just “rigidity” would mislead an engineer.

2. Context Sensitivity

Technical documents rely heavily on contextual understanding – units, formulas, schematics, or references to standards. ChatGPT may not recognise context-dependent meanings, such as abbreviations, symbols, or standards specific to a country/industry.

Example: “mmHg” in a medical report must be preserved; a generic translation could misinterpret it as “millimetres”.

3. Ambiguity in Complex Syntax

Technical texts often contain long, nested sentences with multiple clauses.

ChatGPT can sometimes misplace modifiers, prepositions, or references, creating ambiguous or misleading translations.

4. Terminology Consistency

Professional technical translation requires consistent use of specialised terms throughout the text. ChatGPT may vary the translation of the same term in different sentences, causing confusion or non-compliance with industry norms.

5. Standards Compliance

Many technical documents must adhere to ISO, IEEE, ASTM, or other industry standards. ChatGPT is not trained to guarantee compliance, and its translations may violate standard terminology or formatting rules.

6. No Verification of Sources

ChatGPT does not provide references for terminology, which is critical in technical writing. Translators often need to cross-check with official dictionaries, technical manuals, or industry glossaries, which ChatGPT cannot reliably do.

7. Nuances in Measurement Units and Calculations

ChatGPT can misinterpret or inconsistently convert units of measurement, leading to errors in engineering, chemistry, or physics texts.

For example: “*The bearing capacity of the soil should be evaluated considering the SPT N-value.*” ChatGPT translation (Ukrainian, incorrect): “*Носійність ґрунту слід оцінювати, враховуючи SPT N-значення.*”

Mistake: “bearing capacity” is translated literally as “носійність,” which is ambiguous in Ukrainian; the proper term is “несуча здатність”.

Another example of an AI translation inaccuracy can be observed: the Ukrainian phrase “*Проектування сейсмостійких конструкцій*” was rendered by ChatGPT as “*Design of Earthquake-Resistant Structures*” or “*Earthquake-Resistant Design of Structures.*” However, in the Eurocodes (the official European structural design standards), this phrase is translated as “*Design of Structures for Earthquake Resistance.*” This demonstrates that AI is not always aware of Eurocode terminology. Eurocodes are a set of harmonised European standards that provide common structural design rules for buildings, infrastructure, and engineering works across the EU.

ChatGPT is useful for drafting, rough translation, or understanding technical content. However, for professional, publication-ready, or legally binding technical translations, relying solely on ChatGPT is inappropriate because of risks in accuracy, terminology consistency, context understanding, and standards compliance.

SELF-ASSESSMENT

- 1) What is technical translation?
 - a) Translating technical documents from one language to another
 - b) Translating literary works from one language to another
 - c) Translating legal documents from one language to another
- 2) What are some of the challenges of technical translation?
 - a) Understanding technical terms and concepts in the source language
 - b) Finding the equivalent technical terms in the target language
 - c) Maintaining consistency of terminology throughout the translation
- 3) What is localisation in technical translation?
 - a) Adapting a product or service to a specific locale or target market
 - b) Translating technical documents for a specific industry
 - c) Providing on-site interpretation services for technical conferences
- 4) Which of the following industries require technical translation?
 - a) Medical and pharmaceutical
 - b) Information technology
 - c) Legal and financial
- 5) Which of the following translation tools can be used for technical translation?
 - a) Translation memory software
 - b) Machine translation software
 - c) Terminology management tools
- 6) What is a technical glossary?
 - a) A list of technical terms and their definitions
 - b) A glossary of common phrases in a language
 - c) A list of idioms and colloquial expressions in a language

- 7) What is a style guide in technical translation?
- a) A set of rules for writing and formatting technical documents
 - b) A guide to translation quality assurance and best practices
 - c) A guide to using specific translation tools and software
- 8) What is the role of a technical translator?
- a) Translating technical documents accurately and effectively
 - b) Understanding technical terms and concepts in the source language
 - c) Maintaining consistency of terminology throughout the translation
- 9) Which of the following factors can affect the quality of a technical translation?
- a) The qualifications and experience of the translator
 - b) The use of appropriate translation tools and software
 - c) The amount of time and resources allocated for the translation project
- 10) What is back translation in technical translation?
- a) Translating a document from the target language back to the source language
 - b) Translating a document multiple times using different translators
 - c) Checking the accuracy and consistency of a translation by having it translated back to the source language.

PRACTICAL PART

I.Preparation

Before reading, study the following vocabulary:

employee / employer

a full-time / part-time job

job interview

to apply for a job

vacancy

to fire somebody, to sack somebody

to give somebody notice

unemployment

flexible timetable

salary

to work in shifts

to work overtime

II. Reading Text

Strategies to Build a Successful Career

Having a successful career will offer you a lot of benefits and real profitable opportunities. As we live in a world governed by social status and money, working your way up to the top will definitely improve your quality of life. There are many possible reasons why an individual would desire success.

1. Identify Your Goals

You need to identify what your biggest rational wishes. Then, start going deeper and make an in-depth introspection in which you should think about the connection between your inner desires and your rational goals.

They have to match. Otherwise, you will not be truly fulfilled with your professional life. Identifying your goals takes some time and effort, but it is a truly important process in any successful person's journey.

2. Build a Professional Resume

By taking care of this aspect, you are making sure that you'll never be caught off guard. Opportunities are everywhere, and you should always be ready with a quality resume. I believe that letting professionals deal with your resume is a productive choice.

3. Become Aware of Your Strengths

Awareness is an essential key to personal improvement. By being aware of your inner thoughts, your strengths, your desires, and your disadvantages, you can adapt your life to whatever conditions you're being put through. You'll also get many benefits as you can leverage your knowledge and wisdom for the best purposes.

4. Assume Full Responsibility for Your Life

One difference between mediocre and successful professionals: responsibility. Even though you know the concept, you may not apply it every day. Whenever something bad happens, you need to assume it.

Start assuming responsibility for all of your actions and never blame anyone for your mistakes. That's the worst thing someone can do. Do not take things personally, and be calm.

5. Always Raise Your Standards

Here's another critical factor that differentiates the successful from the non-successful. Your standards influence the way you think, believe, and behave. If your standards are high, you'll never be satisfied with less than you can accomplish. People with high standards are, most of the time, more successful than the average.

Every two or three months, take a moment to reflect upon your standards and values. Try to improve them bit by bit until you realise that you've become the best version of yourself.

6. Brand Yourself

Branding is very important nowadays. Big companies are spending hundreds of millions to establish themselves as the "big dogs" in the marketplace. It is an old business strategy used by almost every professional company. Your branding is your image in the marketplace.

Professional employees should brand their names and services and constantly improve them. You can do that by starting a blog, creating a professional social media profile, or simply by providing awesome services.

7. Network - A LOT

Networking is all about opportunities and connections. When you meet new people, you basically get a chance to use their skills to your advantage. Of course, you must also give back something: your services, your knowledge, your money. Successful people always network and create those life-lasting, profitable relationships.

Start by creating social media profiles on LinkedIn, Twitter, and Facebook. These three specific networks are the best choices when it comes to this type of activity.

After-reading tasks

1. Insert the appropriate word or word combination from Vocabulary:

There are as many kinds of careers as there are people. They vary greatly in the type of work involved and in the ways they (1) _____ a person's life.

The kind of career you have can (2) _____ your life in many ways. For example, it can (3) _____ where you live and the friends you make. It can reflect how much education you have and can determine the (4) _____ of money you earn. Your career can also affect the way you feel about yourself and the way other people act toward you. By making wise decisions (5) _____ your career, you can help yourself build the life you want.

To make wise career decisions and plans, you need as much information as possible. The more you know about yourself and career (6) _____, the better able you will be to choose a (7) _____ career.

Learning about oneself. People differ in what they want from a career. Many people desire a high income. Some hope for fame. Others want (8) _____. Still others want to serve people and make the world a better place.

Before you begin to (9) _____ career fields, you should determine (a) your values; (b) your interests; and (c) your aptitudes (abilities). Most people are happiest in jobs that (10) _____ their values, interests, and aptitudes.

Each person has many values, which vary in strength. For example, money is the strongest value for some people – that is, wealth is more important to them than anything else. As a result, they (11) _____ their thoughts, behaviour, and emotions on the goal of earning a high income. Other values include devotion to religion, taking risks, spending time with family, and helping others. People should understand their values before making a career decision. You can develop an understanding of your values by asking yourself what is most important to you and by examining your beliefs. For example, is it important to you to work as a member of a team? Or would you rather be in charge or work alone? If working alone or being in charge is important to you, independence is probably one of your (12) _____ values.

	A	B	C	D
1	move	influence	persuade	guide
2	move	interest	disturb	affect
3	control	choose	determine	discover
4	amount	mass	volume	supply

5	in relevant to	concerning	respect	in a case
6	hours	moments	occasions	opportunities
7	satisfying	delightful	comfortable	suitable
8	accident	experience	adventure	incident
9	research	examine	inspect	explore
10	fit	agree	change	belong
11	move	meet	focus	follow
12	best	primary	elementary	primitive

2. Answer the questions:

- 1) Do you agree with all strategies for building a successful career?
- 2) What categories of people are a part-time job suitable for?
- 3) Is the unemployment level high in Ukraine?
- 4) What steps should you take to apply for a job?
- 5) Why is it difficult/easy to run a firm?
- 6) What are the most important criteria for a successful job?

3. Quiz:

1. Abilities relating to dealing with persons on the job
 - a) interpersonal
 - b) teamwork skills
 - c) networking
 - d) punctuality
2. A meeting between an employer and a job applicant
 - a) board meeting
 - b) interview
 - c) on-the-job training
 - d) negotiation
3. A person working for someone else
 - a) employer
 - b) employee
 - c) co-worker
 - d) trainee
4. A form in which you supply information about yourself that will help an employer make a hiring decision
 - a) references
 - b) summary
 - c) CV
5. Someone who hires another person

- a) employee
 - b) employer
 - c) HR
 - d) job personnel
6. Making use of all your personal connections to achieve your career goals
- a) teamwork
 - b) collaboration
 - c) negotiation
 - d) promotion
7. People who know an applicant well and can provide information about that person professionally
- a) parents
 - b) references
 - c) acquaintances
 - d) colleagues
8. Someone who applies for a job
- a) candidate
 - b) applicant
 - c) employee
 - d) job seeker
9. Being able to easily accept new challenges
- a) flexible
 - b) integrity
 - c) creativity
 - d) aptitude
10. An arrangement in which someone learns an art, trade, or job under another
- a) courses
 - b) apprenticeship
 - c) training
 - d) negotiation

4. Discussing the topic “Job satisfaction”

Work in pairs or groups. Arrange “job satisfaction features” in the order of importance. Make use of the relevant features and appropriate expressions for discussion:

Being able to learn new things
Earning plenty of money
Being part of a team
Meeting people through work
Having pleasant colleagues
Being praised by my superiors or bosses
A pleasant working environment
Using a foreign language
Financial independence

*Good chances of promotion
Professional growth
Being a boss / exercising power
Status of my organization*

*The most important thing for me is
The second important thing for me is
I don't consider this aspect of my future job very important because
I'm afraid you are mistaken / wrong when you say that....
I think your opinion is absolute nonsense because....
It matters very little for me....
It matters very little in my job....
.... is less significant than....
.... is more significant / more important than....
I don't attach too much importance to*

6. Write your own CV based on the sample

STEVEN TERRY
Sales Staff



CONTACTS

 Male

 May 19, 1992

 986-2323-3434

 Steven@3223.com

 [Http://steven-info.me](http://steven-info.me)

 London, England

OBJECTIVE

Take advantages of sales skills & experience and understanding of market to become a professional Sales Staff and bring a lot value to Customers. From that, I will contribute to development of TOPCV Company.

SKILLS

Language: English, Japanese, Chinese
Computer: Word, Excel, Powerpoint

INTERESTS

I like soccer, music..

EDUCATION

Oct 2010 - May 2014
TOPCV University, Major: Corporate Administration
GPA: 3.6/4

Oct 2010 - May 2014
TOPCV University, Major: Corporate Administration
GPA: 3.6/4

WORK EXPERIENCE

June 2014 - Present
TOPCV JSC, Sales Staff
- Write and upload product advertising post via Facebook, Forum...
- Introduce, consult products and answer customers' queries via phone and email.

Nov 2013 - Jun 2014
TOPCV Shop, Part-time Sales Staff
- Sell goods for Foreigners and Vietnamese at the Shop
- Advertise products on media publications such as: banner, posters, leaflets...
- Make reports of sales every day.

ACTIVITIES

Jan 2014 - Feb 2014
TOPCV - EDUCATION TALK 2014, Member of US Ambassador
- Organize monthly events, network with US alumni
- Share how to hunt scholarships and US student's life experiences to all students who have received offers from US universities

HONORS & AWARDS

2013-2014: TOPCV Scholarship in 2nd semester 2012-2013 and 1st semester 2013-2014

REFERENCES

Mr: Jack Harison - Director of TOPCV JSC
Phone: 986-2323-3434

Unit 2. SOFT SKILLS



THEORETICAL PART TRANSLATION PECULIARITIES OF URBAN DEVELOPMENT TERMS

Read and check your understanding.

Urban development terminology.

Urban development terminology is quite specific because it combines technical, legal, economic, social, and environmental concepts. Its peculiarities include:

- 1) multidisciplinary – terms come from architecture, construction, geography, law, ecology, and economics: *land-use planning, zoning regulations*.
- 2) Prevalence of compound and multicomponent terms – English as an analytical language prefers compounding over prepositional phrases: *brownfield redevelopment, urban sprawl, climate-resilient urban planning, sustainable urban mobility plan, mixed-use development strategy*.
- 3) Use of abbreviations and acronyms – to shorten complex concepts widely used in professional discourse: *GIS (Geographic Information System), LULU – Locally Unwanted Land Use, TOD – Transit-Oriented Development*.
- 4) Conceptual density – one term can combine several notions (legal + technical): *sustainable urban drainage system*.

Translating urban development terminology into Ukrainian requires understanding technical, legal, social, and environmental aspects of city planning. English urban planning terms are often complex, including multicomponent expressions such as mixed-use development or stormwater management, which may not have direct equivalents in Ukrainian. Literal translation can sometimes distort the meaning, so translators need to use strategies that convey the intended technical and conceptual sense clearly.

The most difficulties in translating urban development terminology arise from neologisms, multicomponent terms, and abbreviations. These types of terms often lack direct equivalents in Ukrainian, contain specialised technical or legal meaning, or combine several concepts into one expression. For example, neologisms like *smart city* or *transit-oriented development* introduce new concepts that must be either adapted, transliterated, or explained in Ukrainian. E.g. *Greenbelt zoning* → «зонування з метою створення зеленої смуги» (descriptive translation for clarity).

Multicomponent terms, such as *stormwater management system* or *mixed-use development*, often require transformation or addition to maintain clarity and grammatical correctness. E.g. *Stormwater management system* → «система управління дощовими водами» (transformation with noun phrase order adjusted for Ukrainian)

Abbreviations like FAR, GDP, and LEED need careful handling, often involving transliteration, expansion, or explanatory notes. For example, *FAR (Floor Area Ratio)* is usually explained as *коефіцієнт забудови*.

Calque. This is a technique where the parts of a word are translated by the corresponding elements in the target language. Calque can only be applied when the translation equivalent does not violate the norms of usage and word combination in the Ukrainian language. Calque is not always a simple mechanical operation aimed at transferring the source form into the target form. For example, *green belt* is translated directly as *зелений пояс*, preserving the image and meaning. Similarly, *urban sprawl* is rendered as *міська розповзлість* or more naturally *хаотична забудова*.

Generalization. The English term *brownfield redevelopment* is often generalised as *реконструкція промислових територій*, since the notion of *brownfield* is not always clear to Ukrainian audiences.

SELF-ASSESSMENT

1. The English urban sprawl is translated as хаотична забудова. What strategy is used?
 - a) calque
 - b) descriptive translation
 - c) omission
 - d) generalisation
2. The English sustainable urban mobility plan is translated as план сталої міської мобільності. What transformation is applied?
 - a) concretisation
 - b) grammatical restructuring
 - c) omission
 - d) transcription
3. The abbreviation FAR (Floor Area Ratio) is usually rendered as коефіцієнт забудови. Which strategy is this?
 - a) omission
 - b) generalisation
 - c) explicitation
 - d) calque
4. The English mixed-use development is translated as забудова зі змішаним використанням. This is an example of...
 - a) functional equivalent
 - b) omission
 - c) calque
 - d) borrowing
5. The English LEED certification often appears in Ukrainian texts as сертифікація LEED. What strategy is applied here?
 - a) calque
 - b) borrowing with explanation
 - c) generalisation

d) concretisation

PRACTICAL PART

I. Preparation

Before reading, study the following vocabulary:

to perform
to define
abilities
negotiating
troubleshooting
measurable
specific tasks
requirements
accurate
to highlight
to elaborate

II. Reading Text

Hard skills vs. Soft skills

When you are looking for recruits or promoting from within, there will be a set of skills your roles require. Some skills people will have as part of their nature, while others need to be taught.

The hard skills can be defined as part of the role specification. And soft skills are defined as the person specification.



What are Hard Skills?

Hard skills are specific competencies, skills, knowledge, and abilities needed to perform a specific task or role. They can be learned through education and professional development. Usually, they are technical (but not always) and easily measurable.

Hard skills can be demonstrated through educational certificates or practical demonstrations.

For example, software development requires knowledge of a programming language and can be used for a variety of tasks, but the main goal is to write a computer program. The proficiency level can be easily measured.

Another example, design (of course, it can be different - interior design, web design, etc.) but in general, it is a specific skill set needed to perform exact tasks.

Microsoft suite knowledge, another example of hard skills, you can learn how to use Microsoft Word and Excel, and most often it will be needed for specific tasks.

So, each role will have a different skill set requirement, but they will be needed to perform a specific task.

Soft skills are personality traits, social competencies, skills, knowledge, and abilities used to perform interpersonal activities and unique tasks. Sometimes they are also called *human skills*.

Usually, they are more closely linked to people's personality traits, which they are born with and social skills. But they can also be trained and developed through practice and professional development.

Unfortunately, it is not that easy to gauge if someone has the right soft skills, as there is less information to draw upon. This is especially true when hiring new employees, as their soft skills will need to be assessed by getting to know them. Some specific techniques and tests can be used to measure soft skills, but note the results will be quite vague and not accurate. Only real-life situations will display how good people are in this area.

Certain soft skills you would ideally like all of your employees to have are punctuality and collaboration. Other skills might only be necessary for specific roles like leadership, communication, strategic thinking, and problem-solving.

Soft skills don't come with certification, but they are easily identified while working with someone. People with leadership skills will naturally take ownership and step up to lead. Those who are excellent timekeepers will always be on time or be forthcoming about potential lateness.

How to highlight your skills throughout the interview process

Once you make it to the interview phase, you will have an opportunity to display your soft skills and elaborate more on your hard skills. You may be asked to display your hard skills with a test or portfolio.

You can highlight key soft skills by:

Showing up on time or early to the interview (punctuality or dependability)

Maintaining eye contact (active listening)

Speaking clearly when prompted (effective communication)

Answering questions about your resume and experience honestly (integrity)

Asking follow-up questions (active listening)

You can highlight your hard skills by:

Elaborating on your experience and training
Providing a portfolio (digital or physical)
Effectively answering technical questions related to the work
Asking follow-up questions related to the work
Effectively working through skills tests (if required at the interview)
(From: <https://www.valamis.com/hub/hard-skills-vs-soft-skills>)

After-text exercises

1. Tick the sentences true/false:

- 1) Hard skills may be easy to observe, quantify, and measure.
- 2) Hard skills are not generally listed in the job postings or job descriptions.
- 3) Hard skills are often learned in schools, Universities, and from books.
- 4) Soft skills are the Non-Technical Skills necessary for success in the workplace.
- 5) Soft skills are not typically associated with the behaviours and personality traits of an individual.

2. Insert the appropriate word or word combination from Vocabulary:

- 1) Hard skills are technical (but not always) and easily
- 2) We need someone who is practised at ... business deals.
- 3) He's very good at ... because he knows these computers as well as anybody.
- 4) The report ... the need for improved safety.
- 5) He refused ... on why he had resigned.
- 6) The figures they have used are just not ...
- 7) We usually ask interviewees ... a few simple tasks on the computer just to test their aptitude.
- 8) One of the ...of the job is fluency in two or more languages.

3. Answer the questions:

- 1) What soft skills do you have?
- 2) What soft skills would you like to have?
- 3) Is it possible for a person to have all of them?
- 4) What soft skills should an engineer have?
- 5) What steps should be taken to develop soft skills?
- 6) What is troubleshooting
- 7) Evaluate your hard skills.

4. Speak about the differences between hard and soft skills.

5. Find simple, derivative, complex and multicomponent terms in the text. Translate it into Ukrainian. What translation techniques did you apply?

In modern **construction**, efficient **planning** and **scheduling** are critical for project **success**. Engineers must evaluate the **load-bearing** capacity of each **structural** component, such as **beams**, **columns**, and **foundation systems**. Specialised **load-distributing** materials, like reinforced concrete, are often used in high-stress areas to ensure **stability**. **Architectural** elements like walls, **roofs**, and **flooring** are also essential, each with its own **specifications** and **installation** requirements.

The **prefabrication** of certain **structural** elements has become common to improve **efficiency** and **reduce** overall costs. Complex systems, such as **HVAC (heating, ventilation, and air conditioning)**, are integrated into buildings to control **temperature** and **air quality**. Adhering to **safety regulations** and ensuring **compliance** with local and international **codes** like Eurocodes are essential for ensuring both **worker** and **occupant safety**.

For large-scale **commercial building projects**, **energy-efficient structural systems** are increasingly in demand. These projects often require **high-strength reinforced concrete** and **seismic-resistant frameworks** to withstand environmental forces. In many cases, the use of **thermal insulation materials** and **acoustic dampening panels** is specified to improve **indoor environmental quality** and meet **sustainability standards**. Additionally, **building information modelling (BIM)** systems facilitate the **coordination of multi-disciplinary teams**, allowing for accurate **3D visualisation** and streamlined **construction management processes**. Adherence to **Eurocode seismic design guidelines** and **fire protection standards** ensures the **safety and durability** of the structure throughout its lifespan.

UNIT 3. MY SPECIALTY



THEORETICAL PART

TRANSLATION OF MULTICOMPONENT TERMS

Read and check your understanding.

Multicomponent terms have great importance in any scientific or technical text because they have a clear scientific definition, possess stability and semantic integrity of the concept being represented. Multicomponent terms include multi-word expressions with three or more components. For example, "*правила пожежної небезпеки*" can be translated as "*fire safety rules*."

There is a significant number of multi-component terms in urban development terminology because this field is multidisciplinary and deals with complex concepts that single words cannot express. Urban development integrates architecture, engineering, law, ecology, economics, and social sciences, so terms often combine several components to reflect multiple aspects at once. For example:

integrated water resource management (technical + environmental + management aspect); public-private partnership agreement (legal + economic dimension); sustainable urban transport system (ecological + urban + infrastructural element).

Reasons why multi-component terms dominate:

- Precision – Urban planning requires detailed specifications (e.g., *land-use zoning regulations*).
- Analytical nature of English – English prefers compounding and prepositional phrases over long derivational forms.
- Interdisciplinarity – one concept often covers engineering, social, legal, and economic elements.
- Emergence of neologisms – new urban challenges (*smart cities, green infrastructure*) require new, complex terms.

However, multi-component term-phrases can eliminate ambiguity in terminology.

Multicomponent terms in English consist of a base component (BC), one or several left modifiers (LM), and one or several prepositional modifiers (PM) that specify and modify the meaning of a term. English multicomponent terms with typical left deployment have dependent components that are located to the left of the base component, while for Ukrainian multicomponent terms, the opposite is true with typical right deployment. This fact should be taken into account when translating multicomponent terms.

In general, the structural scheme of a terminological group in the source language (SL) can be presented in the following form:

$$LM_n \leftarrow LM_2 \leftarrow LM_1 \leftarrow BC$$

For example, multi-component terms *land-use planning* → *планування використання земель*, *waste management strategy* → *стратегія управління відходами*. The main components in the source language, *strategy*, and *planning*

become the first components in the translated term, and then the sequence of translated components is unfolded from right to left.

The Ukrainian translation can follow the same order as in English:

urban transport system → *міська транспортна система*

water supply network → *водопостачальна мережа*

public green space → *громадський зелений простір*

Thus, translating a multi-component term consisting of four, five, or more components means:

- establishing inter-component connections in the terminological phrase;
- identifying the main component – the headword of the term-phrase and translating it;
- translating all isolated basic terms within the multi-component term that are semantically related to the main component, based on context and taking into account the specific terminology of the corresponding science;
- performing the actual translation of the multi-component term (usually translating from right to left, starting with the main component, and coordinating the previously translated basic units with each other);
- verifying the accuracy of the translation using dictionaries, reference literature, or internet search engines to ensure that such a term actually exists in the professional construction environment.

To sum it up, the main way of creating multi-component terms is syntactic, i.e. non-prepositional. For English multi-component terms with typical left deployment, dependent components are located to the left of the main component, while for Ukrainian multi-component terms, on the contrary, right deployment is typical.

SELF-ASSESSMENT

1. What is a multicomponent term?
 - a) A term that consists of multiple words
 - b) A term that consists of multiple components that have specific meanings and are used in specific contexts
 - c) A term that has multiple translations in different languages
2. What is the main method of creating multicomponent terms?
 - a) Semantic derivation
 - b) Syntactic derivation
 - c) Borrowing from other languages
3. What is the typical word order for English multicomponent terms?
 - a) Left-to-right
 - b) Right-to-left
 - c) It depends on the type of term
4. What is the main component of a multicomponent term?
 - a) The first component
 - b) The middle component
 - c) The head component that gives the term its meaning

5. What is the process of translating a multicomponent term?
 - a) Breaking it down into its individual components and translating each one separately
 - b) Translating the term as a whole, without considering its components
 - c) Identifying the core component and translating it, while also considering the meanings of the other components in the specific context
6. What is the importance of considering the word order in multicomponent terms during translation?
 - a) It is not important and can be ignored
 - b) It is important for maintaining the correct syntax and grammar in the target language
 - c) Is it important for determining the correct meanings of the individual components in the source language?
7. What are some strategies for verifying the accuracy of a translated multicomponent term?
 - a) Consulting dictionaries and reference materials
 - b) Checking the translation with a native speaker of the target language
 - c) Searching for the term in online databases and specialised resources
8. What is the most common direction for translating multicomponent terms?
 - a) Left-to-right
 - b) Right-to-left
 - c) It depends on the type of term and the language pair involved
9. What is the difference between a multicomponent term and a compound word?
 - a) There is no difference; they are synonyms
 - b) A multicomponent term is a technical or specialised term, while a compound word is a more general term
 - c) A compound word is a type of multicomponent term that is commonly used in everyday language
10. What is the purpose of using multicomponent terms in technical or specialised fields?
 - a) To create confusion and obscure meaning
 - b) To simplify communication and provide a precise, unambiguous vocabulary
 - c) To make communication more colourful and interesting

PRACTICAL PART

I. Preparation

Before reading, study the following vocabulary:

to shape

tangible

layout

compliance

regulations

diverse

sustainable

*to deal with
blueprint
appropriate*

II. Reading Text

Urban Planner vs Architect

An urban planner and an architect both influence the design and organisation of human environments, yet their professional responsibilities differ in scope and orientation. An architect primarily concentrates on individual structures such as residential houses, public institutions, or commercial buildings. By contrast, an urban planner addresses entire districts, metropolitan regions, or even the long-term development strategies of cities.

The work of an architect is highly specialised and requires a balance between aesthetics, functionality, and structural safety. Architects decide not only on the outward appearance of a building but also on its internal circulation, the choice of construction materials, and compliance with legal regulations. They must ensure that the final structure is both visually appealing and technically reliable.

Urban planners, however, operate on a macro level. Their responsibility is to coordinate diverse elements such as transportation networks, housing systems, industrial zones, and recreational spaces. They must anticipate population growth, analyse demographic patterns, and integrate solutions that promote sustainable development. This requires them to look far beyond present-day needs and to design spaces that will remain efficient and livable for future generations.

For example, while an architect might design a modern and efficient hospital, it is the urban planner who determines the most appropriate location. If the hospital is placed without considering accessibility or public transport, even the best architectural project will fail to serve the community effectively. Thus, planners must constantly consider interconnections between buildings, infrastructure, and social services.

Another key distinction lies in perspective. Architects usually deal with one project at a time, focusing on detailed execution. Urban planners, by contrast, adopt a broad, holistic view, addressing complex challenges such as traffic congestion, environmental pollution, urban sprawl, and climate resilience. Their decisions have the potential to influence the everyday life of thousands, or even millions, of inhabitants.

Nevertheless, both professions are deeply interdependent. Large-scale projects, such as the development of a new residential district or the regeneration of an old industrial area, require collaboration. Urban planners first create the general blueprint, establishing zoning rules and spatial layouts, after which architects translate those frameworks into tangible buildings and public spaces. Without effective cooperation, urban development risks becoming chaotic or inefficient.

Although their duties differ, both careers demand creativity, critical thinking, and the capacity to negotiate with engineers, local authorities, and community

representatives. Communication skills are essential, since both architects and planners must present complex ideas in a way that is accessible to specialists and non-experts alike.

In conclusion, architects shape the physical form of individual buildings, while urban planners design the broader fabric of urban life. Their combined efforts ensure that cities are not only functional and sustainable but also attractive and inspiring places for human interaction. By merging vision with practicality, they play a crucial role in shaping the future of our built environment.

After-text exercises

1. Insert the appropriate word or word combination from the text:

- 1) An architect must ensure that every building design is in full _____ with legal regulations.
- 2) Urban planners study _____ patterns to anticipate population growth and future housing needs.
- 3) Unlike architects, planners take a _____ view, analyzing transportation, housing, and industry together.
- 4) Heavy traffic _____ is one of the most serious challenges for modern cities.
- 5) Old industrial districts often require _____ to become useful for communities again.
- 6) The _____ of a city refers to its overall structure, including buildings, streets, and social spaces.

Word Bank: *compliance, holistic, fabric, congestion, demographic, regeneration*

2. Match the words with their definitions:

Words:

Zoning rules

Urban sprawl

Blueprint

Sustainable development

Infrastructure

Demographic patterns

- a) The way the population is distributed and changes over time.
- b) Regulations that divide land into areas with specific permitted uses.
- c) A detailed plan or design that guides construction or development.
- d) Expansion of a city into surrounding rural areas, often without planning.
- e) Systems and facilities such as transport, water supply, and energy that support urban life.
- f) Development that meets present needs without compromising resources for future generations.

3. Answer the questions:

- 1) What is the main difference between the responsibilities of an architect and an urban planner?
- 2) How does an architect balance aesthetics, functionality, and safety in their projects?
- 3) Why must urban planners consider not only present-day needs but also future generations?
- 4) What example does the text give to illustrate the cooperation between architects and urban planners?
- 5) What kind of perspective do urban planners adopt compared to architects?
- 6) Which urban challenges are mentioned as part of an urban planner's work?
- 7) Why are communication skills essential for both architects and urban planners?

4. Fill in the table:

	Urban Planner	Architect
Skills		
Responsibilities		

5. Speak upon the topic “My Speciality” according to the template:

- Introduction (introduce your profession, explain why you chose it);
- Skills and Knowledge (describe the specific skills and knowledge required for your speciality);
- Work environment (explain the typical work environment, discuss any challenges or rewards associated with working in your field);
- Career Paths (outline the various career paths, discuss any trends in the industry that may impact career prospects);
- Conclusion (summarise your thoughts on your speciality and its importance).

UNIT 4. URBAN DEVELOPMENT

THEORETICAL PART



STRUCTURAL PECULIARITIES OF URBAN DEVELOPMENT

TERMS

Read and check your understanding.

In urban development terminology, you'll often find a variety of structural peculiarities in terms of their complexity and composition. Let's break down some examples:

Simple Terms: These are basic terms that consist of a single word representing a concept or component in construction. Examples include *park*, *beam*, *column*, or *roof*. Simple terms are straightforward and often serve as building blocks for more complex terminology.

Compound Terms: compound terms are formed by combining two or more simple terms to create a new concept or describe a specific component or process. These terms typically follow a pattern of noun-noun or adjective-noun combinations. For instance, *public space*, *transport corridor*, or *insulation panel* are compound terms commonly used in construction. They provide more precise descriptions by combining multiple elements into one term.

Complex Terms: complex terms involve additional elements such as prefixes, suffixes, or modifiers to further specify or modify the meaning of the base term. These elements can indicate characteristics such as size, function, material, or operation. For example, a *high-rise building* includes the adjective *high* to specify the building's height.

Derivative Terms: derivative terms are formed by modifying an existing term to create a new word with a related meaning. This modification can involve adding a prefix or suffix, altering the spelling, or combining elements from different languages. Derivative terms often arise from technological advancements, industry jargon, or specialised applications. Examples include *gentrification*, *pedestrianisation*, *urbanisation*, or *densification*.

The typical structure models are:

1. Noun + Noun

traffic congestion – транспортні затори

road network – дорожня мережа

2. Participle I + Noun

existing building – існуюча будівля

surrounding area – прилегла територія

developing district – район, що розвивається

growing population – зростаюче населення

3. Adjective + Noun + Noun

sustainable transport system – система сталого транспорту

green infrastructure plan – план зеленої інфраструктури
renewable energy network – мережа відновлюваної енергії

4. Noun + Noun + Noun

public transport hub – транспортний вузол громадського користування
storm water management – управління дощовими водами
city master plan – генеральний план міста

5. Participle II + Noun + Noun

integrated transport system – інтегрована транспортна система
constructed public facilities – побудовані громадські споруди

When translating from one language to another, understanding the structural model of terms in the source language helps translators accurately convey the intended meaning in the target language. Understanding the structural model of terms facilitates the identification of equivalent expressions or constructions in the target language that best capture the original meaning.

SELF-ASSESSMENT

1. Which of the following is an example of a simple term?
 - a) steel column
 - b) load-bearing wall
 - c) beam
 - d) concrete slab
2. What type of term is *reinforced concrete slab*?
 - a) simple term
 - b) compound term
 - c) complex term
 - d) derivative term
3. Which of the following is a compound term?
 - a) steel beam
 - b) modularisation
 - c) concrete mixer
 - d) wall
4. What does the term *high-rise building* represent?
 - a) a simple term
 - b) a derivative term
 - c) a compound term
 - d) a complex term
5. *Renovation* is an example of which type of term?
 - a) derivative term
 - b) compound term
 - c) simple term
 - d) complex term
6. The term *cutting tool* follows which structural pattern?
 - a) Participle I + Noun
 - b) Noun + Noun
 - c) Adjective + Noun + Noun

- d) Participle II + Noun + Noun
7. Which term is an example of an adjective-noun-noun combination?
- a) load-bearing wall
 - b) high precision lathe
 - c) steel column
 - d) concrete mixer
8. Which term is an example of a noun + noun + noun combination?
- a) integrated machine system
 - b) bevel gear cutter
 - c) mixing tank
 - d) high-rise building
9. *Modularisation* is an example of which type of term?
- a) derivative term
 - b) compound term
 - c) complex term
 - d) simple term
10. Which of the following terms is an example of a participle II + noun + noun?
- a) finished goods warehouse
 - b) cutting tool
 - c) power distribution
 - d) linear displacement sensor

PRACTICAL PART

I. Preparation

Before reading, study the following vocabulary:

subcontractors
blueprints
BIM (Building Information Modelling)
modularization
prefabrication
renovation
Risk Management
compliance
recyclable materials
sustainable

II. Reading a text.

What Is Urban development?

Urban development is the process of improving and organising cities to make them better places for people to live, work, and interact. It is not only about constructing new buildings but also about creating a balanced environment that meets the needs of society.

At its core, urban development focuses on planning land use, building infrastructure, and providing services. Roads, public transport, schools, hospitals,

and housing are all part of this system. Without proper planning, a city can become overcrowded, chaotic, and difficult to manage.

One important aspect of urban development is zoning. This means dividing a city into areas for specific purposes, such as housing, industry, business, or recreation. Zoning helps to reduce conflicts, for example, by keeping factories away from residential neighbourhoods.

Another crucial element is infrastructure. Cities depend on roads, electricity, water supply, sewage systems, and internet networks. If these systems are weak or outdated, people's quality of life decreases. That is why modern urban development often includes the renovation of old infrastructure.

Urban development also pays attention to green spaces. Parks, gardens, and natural areas are essential for health and relaxation. They also improve air quality and protect biodiversity. Many modern cities try to create more green zones as part of sustainable development.

A common challenge for many cities is urban sprawl, which means the uncontrolled spread of housing and businesses into the countryside. Sprawl can destroy farmland and natural habitats. To avoid this, planners promote compact and mixed-use development, where people can live, work, and shop in the same area.

Sustainable development has become a global priority. This approach means creating cities that meet today's needs without damaging the future. For example, using renewable energy, building energy-efficient houses, and supporting public transport instead of private cars all contribute to sustainability.

Urban development is not only physical but also social. Cities must provide affordable housing so that people of different incomes can live there. They also need cultural institutions, sports facilities, and spaces for communication. Social development strengthens communities and reduces inequality.

In recent years, the idea of the smart city has gained attention. A smart city uses digital technologies to improve daily life. For example, sensors can monitor traffic, apps can show bus arrival times, and energy systems can reduce waste. This makes cities more efficient and comfortable.

Another important direction is regeneration. Many cities have old industrial areas or damaged districts that are no longer useful. Instead of leaving them abandoned, urban development projects renew them into cultural centres, business parks, or residential zones. This improves the city's image and economy.

Good urban development requires cooperation between architects, urban planners, engineers, and government officials. Architects design individual buildings, while planners think about the whole structure of the city. Together, they ensure that the city is functional, attractive, and sustainable.

In conclusion, urban development is a complex process that combines design, planning, technology, and social responsibility. It shapes how people live and how future generations will experience their environment. A well-developed city is not just a collection of buildings, but a living organism where housing, transport, work, culture, and nature are in harmony.

SELF-ASSESSMENT

1. What is the main goal of urban development?
 - A) to build as many skyscrapers as possible
 - B) to improve and organise cities for better living
 - C) to increase the number of factories in cities
 - D) to replace old towns with new ones
2. What does “zoning” mean in urban development?
 - A) planting more trees in the city
 - B) dividing land into areas for different purposes
 - C) building underground transport systems
 - D) replacing old houses with new ones
3. Why is infrastructure important in a city?
 - A) it makes cities look more modern
 - B) it provides basic systems like roads, water, and electricity
 - C) it reduces the number of people in the city
 - D) it helps design parks and gardens
4. What is one of the main problems caused by urban sprawl?
 - A) too many parks
 - B) destruction of farmland and nature
 - C) more affordable housing
 - D) safer transport
5. Which of the following is an example of sustainable development?
 - A) building houses with poor insulation
 - B) using renewable energy in housing projects
 - C) expanding roads for more cars
 - D) cutting down green spaces
6. What does affordable housing mean?
 - A) expensive apartments in the city centre
 - B) housing only for wealthy families
 - C) homes that people with lower or middle incomes can pay for
 - D) housing that is far away from public transport
7. What is a smart city?
 - A) a city with many universities
 - B) a city that uses digital technologies to improve services
 - C) a city built only with skyscrapers
 - D) a city without public transport
8. What does regeneration usually involve?
 - A) leaving old industrial areas empty
 - B) moving people from cities to villages

- C) renewing old or unused districts for new purposes
- D) expanding farmland into the city

9. Who usually works together in urban development projects?

- A) farmers and shopkeepers
- B) architects, urban planners, engineers, and officials
- C) only architects
- D) only government workers

10. According to the text, what makes a well-developed city?

- A) a collection of tall buildings
- B) a living organism where housing, transport, culture, and nature are in harmony
- C) a city with no green areas
- D) a place with only industrial zones

After-text exercises

1. Answer the questions:

- 1) What is the main purpose of urban development?
- 2) How does zoning help organise a city?
- 3) Why is infrastructure considered an essential part of urban development?
- 4) What problems can urban sprawl cause?
- 5) How does sustainable development benefit cities and future generations?
- 6) What is the role of regeneration in improving old or damaged urban areas?
- 7) Why is cooperation between architects, urban planners, engineers, and officials important in urban development?

2. True/false:

- 1) Urban development only focuses on building new houses.
 - 2) Zoning divides a city into areas for specific purposes like housing or industry.
 - 3) Infrastructure includes roads, electricity, water supply, and sewage systems.
 - 4) Urban sprawl is a controlled and well-planned expansion of cities.
 - 5) Sustainable development aims to meet today's needs without harming the future.
 - 6) Regeneration involves leaving old industrial areas abandoned.
 - 7) Cooperation between architects, urban planners, and engineers is not important for city projects.
3. Complete the table: write down the terms from the text according to their morphological structure

Simple	Derivatives	Compound

--	--	--

4. **Speaking.** Discuss the role, importance, and challenges of urban planning according to the plan:

I. Introduction

Definition of urban planning

Brief overview of its role in organising cities and communities

II. Role of Urban Planning

Designing city layouts, neighbourhoods, and public spaces

Organising land use (residential, commercial, industrial, recreational)

Planning transportation networks and public services

Ensuring sustainable and functional urban growth

III. Importance of Urban Planning

Economic impact (efficient use of resources, attracting investment)

Social impact (improved quality of life, accessibility, safety)

Environmental impact (green spaces, pollution control, sustainable development)

Cultural and community impact (preserving heritage, promoting social cohesion)

IV. Challenges of Urban Planning

Rapid population growth and urbanisation pressures

Balancing development with environmental protection

Limited funding and resources for infrastructure projects

Conflicts between stakeholders (residents, businesses, government)

Adapting to technological changes and smart city initiatives

V. Conclusion

Summary of urban planning's role and significance

Emphasis on sustainability, cooperation, and long-term vision

Future opportunities for improving urban life through planning



CHAPTER 2. ACADEMIC COMMUNICATION

UNIT 5. WRITING PAPERS, ABSTRACTS, SUMMARIES, ANNOTATIONS, CONFERENCE PROCEEDINGS

THEORETICAL PART

Read and check your understanding.

Academic papers, abstracts, annotations, etc., belong to a formal style.

Formal style includes:

- impersonal, not colloquial or chatty language
- only facts
- not irrelevant details
- use of reporting verbs and passive voice
- no use of short forms

The structure of an **academic paper** can vary depending on the specific discipline, journal or publication guidelines, and the nature of the research. However, a typical structure may include the following sections:

Title page: Includes the title of the paper, the authors' names and affiliations, and the date of publication.

Abstract: Provides a summary of the research, including the research question, methods, results, and conclusions.

Introduction: Introduces the topic and research question, provides background information and context, and outlines the purpose and objectives of the study.

Literature Review: Reviews the relevant literature related to the research question, and synthesises the previous research to establish a theoretical framework or research gap that the current study addresses.

Methods: Describes the research design, participants or subjects, data collection procedures, and analysis methods.

Results: Presents the findings of the study, usually with the aid of tables, graphs, and figures.

Discussion: Interpretation of the results, analysis of the data, and comparison to previous research.

Conclusion: Summarises the main findings of the study, identifies the implications and contributions of the research, and suggests avenues for future research.

References: Lists all the sources cited in the paper according to the required citation style.

Appendices (optional): Includes additional material that supports the study, such as questionnaires, transcripts, or additional figures and tables.

You can find common phrases used in academic papers in Appendix B.

An annotation is a shortened version of the paper written for people who may never read the full version. There are 2 types: descriptive and informative. *Descriptive annotation:* present tense. Generalised vocabulary and phrases.

Informative annotation: past tense. Precise specific language, including numbers.

Annotation structure:

1. Introduction (explanation)\explanation of the title.
2. Discussing the characteristic features of the problem (the aim of the research).
3. Methods and materials describing the method, equipment and conditions of the experiments.
4. Results (main findings).
5. Pros and cons (recommendations).
6. Conclusion.

Clinches for annotation writing

The object (purpose) of this paper is to present (to discuss, to describe, to show, to develop) ...

The paper (article) discusses some problems relating to (deals with some aspects of, considers the problem of, presents the basic theory of, and provides information on) ...

The objective of this article is ...

The work is divided into ... major parts.

The first part deals with ...

Then follows a discussion on ...

Then the author goes on to the problem of ...

The next part presents (describes, discusses) ...

After discussing, the author turns to ...

The final part states ...

The conclusion is that the problem is ...

According to the author ...

The author concludes that ...

In summing up the author ...

Evaluating the situation, the conclusion can be drawn that ...

In my opinion (to my mind, I think) ...

The paper is interesting (not interesting), of importance, valuable (invaluable), upto-date (out-of-date), useful (useless) ...

It gives (doesn't give) me more technical terms ...

It enlarges (doesn't enlarge) the scope in the sphere of ...

An abstract is a 150- to 250-word paragraph that provides readers with a quick overview of your essay or report and its organisation. It should express your thesis (or central idea) and your key points; it should also suggest any implications or applications of the research you discuss in the paper

Typically, an abstract for a paper or presentation is one or two paragraphs long (120 – 500 words). Abstracts usually spend

- 25% of their space on the purpose and importance of the research (Introduction)

- 25% of their space on what you did (Methods)

- 35% of their space on what you found (Results)

- 15% of their space on the implications of the research

Sample of an abstract:

Purpose This paper analyses how novices and experts can safely adapt and transfer their skills to new technology in the medical domain.

Methods To answer this question, we compared the performance of 12 novices (medical students) with the performance of 12 laparoscopic surgeons (using a 2D view) and 4 robotic surgeons, using a new robotic system that allows 2D and 3D views.

Results Our results showed a trivial effect of expertise (surgeons generally performed better than novices). Results also revealed that experts have adaptive transfer capacities and can transfer their skills independently of the human-machine system. However, the expert's performance may be disturbed by changes in their usual environment.

Implications From a safety perspective, this study emphasises the need to take into account the impact of these environmental changes along with the expert's adaptive capacities.

A summary is the information from a text or an article. The summary contains essential information about the literary sources. When writing a summary, one must understand the main ideas of any reading paper. The information from the original literary sources should be compressed. A summary is written for people who have already read the whole thing.

Steps for writing a summary.

1. Identify the main idea.
2. Decide what you are going to leave out. Include the most essential details.
3. At the beginning, include some sentences stating the subject matter of the summary, where the original text came from, and the original author's name.
4. State the author's opinion and not your own.
5. Make sure your verb tenses are appropriate.
6. Make the summary short, not more than 1/3 of the original text.

Guidelines for writing a summary.

1. Read the whole original text quickly to gain an impression of the content and its relevance to your work.
2. Highlight the main points in every paragraph as you read.
3. Make notes of your own on these points.
4. Put away the original and rewrite your notes in your own words in complete sentences.

5. Begin your summary with the statement of the main idea at the start.
6. Using your notes, write out supporting points in well-connected sentences.
7. Reread your work to check that you have concluded all the information that you need.

Pattern for writing a summary.

Definition

The main idea is ... (to + V).

Description

According to the writer, a ____ has (characteristics).

Classification

(Two) types of _____ were discussed in the lecture.

Chronology

The writer explained the sequence of events for _____.

Comparison

The writer compared _____ with _____.

Contrast

The writer contrasted _____ with _____.

Cause and effect

The writer explains why _____.

Problem and Solution

The writer presents several solutions for the problem of _____.

Abstract	Summary	Annotation
It is a shortened version of the paper written for people who never read the full version.	Restates the main findings and conclusions of a paper and is written for people who have already read the whole thing.	What is it about? Goals.

Conference Proceedings

Conference proceedings are the publications of papers presented at a conference. A conference may require that papers missing the publication deadline for the proceedings cannot be presented at the conference. Proceedings usually contain four kinds of information:

- purpose or rationale of study (why they did it)
- methodology (how they did it)
- results (what they found)
- conclusion (what it means) It is not easy to include all the information in just a few words.

Start by writing a summary that includes whatever you think is important, and then gradually prune it down to size by removing unnecessary words, while retaining the necessary concepts. Some rules:

- Scientific writing must be accurate. Although writing instructors may tell you not to use the same word twice in a sentence, it is okay for scientific writing.

- Make sure you say what you mean.
- Be careful with commonly confused words.

For example, *Temperature affects the reaction.* ≠ *Temperature affects the reaction.*

I used solutions in various concentrations. ≠ *I used solutions in varying concentrations.*

Less food (can't count the number of food), but: Fewer animals (can count animals) A large amount of food (can't count them), but: A large number of animals.

The erythrocytes, which are in the blood, contain haemoglobin. ≠ *The erythrocytes that are in the blood contain haemoglobin.* (Wrong. This sentence implies that there are erythrocytes elsewhere that don't contain haemoglobin.)

- Write in a formal style, but at a level appropriate for your audience.
- Use verbs instead of abstract nouns (Instead of: take into consideration – Write: consider)
- Use strong verbs instead of ‘to be’ (Instead of: The enzyme was found to be the active agent in catalyzing ... – Write: The enzyme catalyzed ...)
- Use short words and short sentences. A sentence made of more than 40 words should probably be rewritten as two sentences.
- Check your grammar, spelling and punctuation. Use a spellchecker, but be aware that they do not catch all mistakes. Don't use commas.

SELF-ASSESSMENT

1. What is the typical order of sections in an academic paper?
 - a) Introduction, methods, results, discussion, conclusion, references
 - b) Introduction, literature review, methods, results, discussion, conclusion, references
 - c) Introduction, background, methods, results, discussion, conclusion, references
2. What is the purpose of the introduction section in an academic paper?
 - a) To provide a summary of the methods used in the study
 - b) To discuss the significance of the research
 - c) To present the results of the study
3. What is the literature review section of an academic paper?
 - a) A summary of the data collected during the study
 - b) A discussion of the methods used in the study
 - c) A review of the relevant research and theories related to the study
4. What is the purpose of the results section in an academic paper?
 - a) To discuss the implications of the research
 - b) To present the data collected during the study
 - c) To provide a summary of the research question and methods used
5. What is the conclusion section of an academic paper?
 - a) A summary of the study's results and their implications
 - b) A discussion of potential future research

- c) An explanation of the methods used in the study

PRACTICAL PART

1. Answer the questions:

1. What do you mean by the word “annotation”?
2. What does the concise annotation do?
3. What types of annotation do you know?
4. What stages of annotation do you know?
5. What is the recommended volume of annotation?

2. Read the annotation, entitle it, and write the keywords.

This paper examines the integration of sustainable construction practices to enhance energy efficiency in modern urban infrastructure. It highlights the significance of adopting green building materials and technologies to address environmental challenges and reduce carbon footprints in the construction sector. The study provides a detailed analysis of energy-efficient designs, focusing on passive and active systems, such as advanced insulation, natural ventilation, and renewable energy integration. Case studies of urban development projects are presented, showcasing the application of sustainable strategies and their economic and ecological benefits.

The authors emphasise the role of international standards and building codes, including the Eurocodes, in promoting energy-efficient practices. They also discuss the challenges associated with implementing these standards, such as increased costs, limited material availability, and the need for specialised skills. A comparative analysis of traditional versus sustainable construction methods highlights the long-term advantages of adopting innovative approaches.

The paper concludes that transitioning to sustainable construction is essential for mitigating climate change impacts and achieving global energy targets. It calls for collaborative efforts between policymakers, industry stakeholders, and researchers to advance sustainability in construction. The findings contribute to the body of knowledge by providing practical recommendations for integrating sustainable solutions into construction processes.

3. Read an abstract and find the stylistic and lexical mistakes in it:

Building sustainable cities starts with innovative construction practices. This study dives into how modern materials and energy-efficient designs are shaping urban infrastructure. Think solar panels, green roofs, and clever ventilation systems – they’re not just good for the planet but also for cutting energy bills. By examining real-life projects, the research shows how these ideas work in practice, offering clear benefits for the environment and the economy.

But it’s not all smooth sailing. There are hurdles, like higher costs, finding the right materials, and the need for workers with specialised skills. The role of building codes, like the Eurocodes, is explored to see how they help or hinder the process.

In the end, the study makes a case for teamwork. Policymakers, builders, and researchers all need to collaborate to make these ideas a reality. It's about building smarter today for a greener tomorrow.

4. Write an abstract to any English paper related to construction (200 words)

5. Find any Ukrainian article in your field and write an abstract in English based on the given sample (also see Appendix)

1. The article (paper, book, etc.) deals with ...	1. Ця стаття (робота, книга тощо) стосується ...
2. As the title implies, the article describes ...	2. Згідно з назвою, у статті розглядається ...
3. It is specially noted...	3. Особливо варто відмітити ...
4. Basic information on ... is presented.	4. Надається основна інформація про ...
5. The text gives valuable information on ...	5. Текст надає цінну інформацію щодо ...
6. The paper consists of ... parts (chapters). The paper contains the following parts: ...	6. Робота складається з ... частин (розділів). Робота складається з наступних частин:...
7. The article is of great help to ...	7. Ця стаття стане у нагоді ...
8. The article is of interest to ...	8. Ця стаття становить інтерес для ...
9. It (the article) gives a detailed analysis of ..., and contains the data on...	9. Стаття дає детальний аналіз..., містить дані про ...
10. Special attention is given (paid) to...	10. Особлива увага приділяється ...
11. It should be stressed (emphasised) that...	11. Варто зазначити (підкреслити), що ...
12. The method proposed ...	12. Запропонований метод ...



UNIT 6. WRITING PRESENTATIONS THEORETICAL PART

Read and check your understanding.

Here are some tips on how to make a proper presentation:

Know your audience: Before creating your presentation, you should consider who your audience is, what their interests are, and what they hope to learn from your presentation. This will help you tailor your presentation to meet their needs.

Set clear goals: Determine what you want to achieve with your presentation and set clear goals. This will help you focus your presentation and ensure that your message is clear and concise.

Use a clear structure: Organise your presentation into a clear structure, using headings and subheadings to group related information together. This will help your audience follow your message and understand the key points.

Use visuals: Use visuals such as images, charts, and graphs to help illustrate your points and make your presentation more engaging. Ensure that your visuals are high-quality and relevant to your message.

Practice your delivery: Practice delivering your presentation multiple times to become familiar with the content and build your confidence. Time yourself to make sure you stay within the allotted time frame.

Engage your audience: Engage your audience with interactive elements such as questions, polls, or group discussions. This will help keep their attention and make your presentation more memorable.

Collect feedback: After your presentation, collect feedback from your audience to improve your future presentations. Consider what worked well and what could be improved upon for next time.

Useful phrases for presentations:

Introduction

- Good morning / afternoon, everyone, and welcome to my presentation. First of all, let me thank you all for coming here today.
- Let me start by saying a few words about my own background.
- As you can see on the screen, our topic today is
- My talk is particularly relevant to those of you who
- This talk is designed to act as a **springboard** for discussion.
- This morning/ afternoon, I'm going to take a look at the recent developments in

Presentation structure

- In my presentation, I'll focus on three major issues.
- This presentation is structured as follows
- The subject can be looked at under the following headings
- We can break this area down into the following fields

Timing

- It will take about X minutes to cover these issues.

Handouts

- Does everybody have a **handout** / **copy** of my report?
- I'll be handing out copies of the slides at the end of my talk.
- I can email the PowerPoint presentation to anyone who would like it.
- Don't worry about taking notes, I've put all the relevant statistics on a

handout for you

Questions

- If you have any questions, I am happy to answer them
- If you don't mind, I'd like to leave questions until the end of my talk / there will be time for a **Q&A** session at the end ...

Sequencing phrases

- My first point concerns ...
- First of all, I'd like to give you an overview of
- Next, I'll focus on and then we'll consider
- Then I'll go on to highlight what I see as the main points of
- Finally, I'd like to address the problem of
- Finally, I'd like to raise briefly the issue of

Highlighting information

- I'd like to put the situation into some kind of perspective
- I'd like to discuss in more depth the implications of
- I'd like to make more detailed recommendations regarding
- I'd like you to think about the significance of this figure here
- Whichever way you look at it, the underlying trend is clear

Conclusion

- I'd just like to finish with the words of a famous scientist / politician / author
-
- Now let's go out and create opportunities for ... !

SELF-ASSESSMENT

- 1) What is the purpose of a presentation?
 - a) To inform or persuade an audience
 - b) To entertain an audience
 - c) To sell a product or service
- 2) What are the key elements of a successful presentation?
 - a) Clear and concise message, engaging visuals, and effective delivery
 - b) Complex and technical information, large amounts of text, and monotone delivery
 - c) Humorous anecdotes, flashy animations, and excessive use of jargon
- 3) What is the recommended amount of text on a slide?
 - a) 5-7 words
 - b) 10-12 words
 - c) As many words as necessary to convey the message

- 4) What is the rule of thirds in slide design?
 - a) Dividing the slide into three equal parts horizontally and vertically
 - b) Placing important elements on or near the intersecting points of imaginary lines dividing the slide into thirds
 - c) Using three different font styles or sizes on each slide
- 5) What is the recommended font size for text on slides?
 - a) 12-14 points
 - b) 16-18 points
 - c) 20-22 points
- 6) What is the recommended length of a presentation?
 - a) 30-45 minutes
 - b) 60-90 minutes
 - c) As long as necessary to convey the message
- 7) What are some common presentation delivery techniques?
 - a) Using a conversational tone, maintaining eye contact with the audience, and using gestures to emphasise key points
 - b) Speaking in a monotone voice, reading directly from the slides, and avoiding eye contact with the audience
 - c) Speaking loudly and quickly, using slang or profanity to engage the audience, and pacing back and forth across the stage
- 8) What is the purpose of rehearsing a presentation?
 - a) To ensure a smooth and confident delivery
 - b) To memorise the entire presentation word-for-word
 - c) To save time and avoid making changes to the presentation
- 9) What is the recommended format for presenting numerical data?
 - a) Using graphs or charts to visualise the data
 - b) Presenting the data in a table format
 - c) Describing the data in detail using text
- 10) What is the recommended way to end a presentation?
 - a) Summarising the main points and leaving the audience with a memorable message
 - b) Abruptly ending the presentation without a conclusion
 - c) Repeating the introduction and thanking the audience for their time

PRACTICAL PART

I.Preparation

Before reading, study the following vocabulary:

custodianship
to prioritise
stakeholders
ordinance
diversity
renowned
to contribute

ground-breaking
to foster

II. Reading Text

7 C's of Urban Design

Urban design shapes cities to work well for everyone. The 7 C's provide a framework to guide planners toward healthy, sustainable, and attractive built environments.

Context

Understanding physical, cultural, historical, and environmental surroundings. The design should respond to what already exists: climate, geography, heritage, and local customs. The High Line in New York City is a fantastic illustration of contextually suitable design. The former railway line on which the park is situated served as inspiration for the design of the park, which incorporates elements like steel beams and railway tracks. The park has grown in popularity as a destination for both locals and visitors, and it has contributed to the neighbourhood's transformation.

Character

Giving a place its distinct identity. It means preserving heritage, respecting local styles, yet allowing innovation. Barcelona, Spain, is a fantastic example of this. Barcelona is renowned for its spectacular architecture, including several of Antoni Gaudí's original and ground-breaking creations. While allowing for modern construction that respects the city's identity, the city's urban design ordinance emphasises the preservation of historic buildings. For instance, the Plaça de les Glories Catalanes project, which has a park, a library, and other public amenities, is intended to both commemorate the region's industrial background and offer contemporary amenities for the community.

Choice

Offering people options in housing types, mobility, and recreation. Diversity makes a city more livable and inclusive. Vancouver, Canada, is one instance of a city that places a high value on choice. Vancouver is renowned for offering a wide variety of housing alternatives, from single-family homes to townhouses and high-rise apartments. Additionally, the city has made investments in public transit, including buses, trains, and ferries, giving locals a range of options for getting around. Vancouver also features a vast network of parks and green spaces, providing a variety of leisure choices for citizens of all ages.

Connections

Enabling good transport, walkability, and access to services. Physical linkages that let people move easily. An excellent example of enhancing connections through urban design is the Cheonggyecheon Stream in Seoul, South Korea. The Cheonggyecheon Stream was once a polluted, neglected waterway that ran through the heart of the city. In the early 2000s, the city government decided to transform the stream into a public space that would improve transportation and connect different parts of the city.

Creativity

Encouraging innovative and flexible design approaches. Inviting novel ideas, new architectural forms, and creative responses to urban challenges to enrich the urban experience. The Lotus Temple in Delhi, India, is a wonderful illustration of imaginative urban planning. The temple is made of white marble and has a lotus blossom shape. The Baha'i faith, which emphasises the similarity of all religions, served as inspiration for the temple's design. Both tourists and residents like visiting the temple, and its popularity has aided in fostering a sense of local pride.

Custodianship

Stewardship of public spaces, heritage, and environment. Ensuring places are maintained, resilient, responsible – caring for what exists now so that future generations benefit. An excellent example of urban design that prioritises custodianship is the green roofs of Chicago. In 2004, the city passed a law requiring new buildings with a roof area of more than 2,500 square feet to have at least 20% of their roof area covered in vegetation. Green roofs provide a variety of environmental benefits, including reducing the urban heat island effect and improving air and water quality.

Collaboration

Working across disciplines and with the community. Involving architects, planners, local citizens, and stakeholders in decision-making so designs are grounded, accepted, and beneficial. Example: Berczy Park, Toronto, was designed with local community involvement.

The 7 C's – Context, Character, Choice, Connections, Creativity, Custodianship, Collaboration – together create a guide for designing urban environments that are vibrant, sustainable, inclusive, and rooted in their place. When cities follow these principles, they can better meet diverse needs, respect heritage, promote social well-being, and adapt to change.

From: <https://urbandesignlab.in/7-cs-of-urban-design/?srsltid=AfmBOoqGwcmFFFgX8tIsMxcg5FexcdHg5pcgiOWMESeFAvjU5VVFyf5K>

After-text exercises

1. Answer the questions:

- 1) How can urban designers ensure that new projects respect the context of a city's cultural and historical environment ?
- 2) In what ways can preserving character strengthen the identity of a city while still allowing for modern development ?
- 3) Why is providing choice in housing, mobility, and recreation important for building inclusive cities ?
- 4) How do strong connections between transport, public spaces, and services improve the quality of urban life ?
- 5) What role does creativity play in addressing modern urban challenges such as climate change or overpopulation ?
- 6) How can collaboration between planners, architects, and local communities lead to more sustainable and accepted urban projects ?

2. Creating presentations. Prepare a 10-minute presentation on the topic How Creativity Shapes Urban Life. What to emphasise: Unique shapes, materials, or technology that make buildings and spaces stand out; How design can be functional and visually appealing at the same time.



UNIT 7. WRITING QUALIFICATION PAPER SUMMARY

THEORETICAL PART



Read and check your understanding.

Qualification Paper is an independent study of a specific scientific or artistic issue or an artistic accomplishment illustrating the student's general knowledge and skills related to a particular field of study, the level and profile of education, and the ability to carry out an independent analysis and formulate conclusions.

The Qualification Paper should demonstrate the following from the student concerning the field of study:

- Awareness and understanding of important current work in the field;
- Ability to plan a research activity;
- Knowledge and motivation to carry out the planned research activity;
- Ability to analyse the results of the research;
- Ability to draw reasonable conclusions from the research;
- Ability to complete a written description of the work in the form of a well-written, properly organised thesis;
- Ability to complete a thesis with potential for presentation at and / or participation in professional meetings and/or publication in scholarly journals.

Qualification Paper should have the following structure:

- title page;
- summary;
- contents;
- introduction;
- list of abbreviations and symbols (if necessary);
- chapters of the main body (not less than two);
- conclusions;
- bibliographic reference list;
- appendices (if necessary).

The summary is a key part of your thesis and part of what is evaluated by your thesis committee. Make sure to reserve sufficient time at the very end to write a very good summary. The summary should be about one page long and include your research question, describe the data you used, briefly describe the methodology applied, and (very important) also summarise the results you found. Summary elements:

Purpose: should start by describing the main purpose or aim of the research.

Methods: As a second point, the methodology carried out should be explained.

Results: a concise summary of the results should be included.

Conclusion: A short outline of the general outcome of the research should be given.

Keywords: specific words and phrases related to the topics discussed in the research should be added. These words are usually around five, but the number can vary depending on the journal's guidelines.

PRACTICAL PART

1. Read a summary and answer the questions:

Title: "Optimising Efficiency in Construction: A Comprehensive Analysis"

This thesis delves into the intricacies of construction with a focus on optimising efficiency in construction processes. Through a rigorous examination of industry practices, the research identifies key challenges and opportunities for improvement. Utilising a combination of theoretical frameworks and empirical analysis, the study investigates the impact of various factors on productivity, quality, and cost-effectiveness. Results reveal insights into the effectiveness of different strategies and technologies, shedding light on best practices for enhancing overall efficiency in building operations. By addressing these findings, industry stakeholders can make informed decisions to streamline processes, reduce waste, and maximise output. The conclusion highlights the importance of continuous improvement and adaptation to meet evolving demands in the competitive landscape of building.

1. Does the summary clearly outline the main purpose or aim of the research in the building industry?
2. Does the summary provide concise results or conclusions of the research?
3. Are there specific keywords related to building topics included in the summary?
4. Is there an appropriate balance between description and analysis in the summary?
5. Does the summary adhere to the necessary elements of a thesis summary, such as purpose, methods, results, and conclusion?

2. Read a summary and answer the same questions:

Title: "Enhancing Sustainability in Construction: Innovations and Challenges"

Purpose: The primary objective of this research is to explore strategies for enhancing sustainability within the construction industry. This includes investigating innovative technologies, processes, and practices aimed at reducing environmental impact, optimising resource utilisation, and promoting social responsibility.

Methods: The research methodology involves a comprehensive review of literature, case studies, and industry reports related to sustainable practices in construction. Additionally, empirical analysis and case studies are conducted to examine the effectiveness of various sustainability initiatives implemented by machine-building companies.

Results: The findings of this research highlight the importance of adopting sustainable practices in building, including the use of renewable materials and waste reduction strategies. Furthermore, the study identifies key challenges and barriers to achieving sustainability goals in the industry.

Conclusion: This research underscores the critical role of sustainability in the building sector and provides insights into effective strategies for promoting environmental stewardship and social responsibility. By embracing sustainable

practices, machine-building companies can enhance their competitiveness, mitigate risks, and contribute to a more sustainable future.

Keywords: Sustainability, building, environmental impact, resource utilisation, social responsibility, renewable materials, energy efficiency, waste reduction, sustainable practices.

3. Make a glossary of terms related to your research topic.

Term	Description	Ukrainian equivalent

4. Speaking.

Conduct a comprehensive review of academic papers relevant to your research topic in urban planning. The purpose of this assignment is to deepen your understanding of existing literature, identify key trends, gaps, and controversies in the field, and synthesise findings to inform your own research project.

Review and Analyse Papers: Read and critically evaluate the selected papers, focusing on their relevance, quality, and contribution to the field. Pay attention to key concepts, methodologies, findings, and conclusions presented in each paper. Highlight important insights, strengths, and limitations of the research.

5. Write a summary of your qualification paper (purpose, methods, results, conclusion, keywords). Useful phrases:

Purpose:

The purpose of this qualification paper is to [analyse / investigate / examine / explore] ... in the context of ... The study aims to [identify / evaluate / develop] ...

Methods:

The research methods include [comparative analysis / statistical analysis / content analysis / survey / experiment / case study], which were applied to [texts / projects / data / terminology] to achieve the objectives.

Results:

The results of the study indicate that ... The analysis revealed ... It was found that ... [Key findings, patterns, or tendencies].

Conclusion:

In conclusion, the study confirms that ... The findings contribute to ... The research highlights the importance of ... and may be useful for ...

CHAPTER 3. URBAN DEVELOPMENT INNOVATIONS

UNIT 8. ADAPTIVE CITIES

THEORETICAL PART EDITING OF MACHINE TRANSLATION



Read and check your understanding.

When a computer, rather than a human, performs an initial translation, editing and proofreading are crucial for revising and improving the text. Machine translation engines still produce inaccurate or confusing phrases, so an expert (who is often a translator trained in editing techniques) needs to edit the text to remove errors and correct word choice. This specific type of translation editing and proofreading is called machine translation post-editing, and it focuses on errors unique to machine-generated results.

Proofreaders work with almost-finalised drafts and cover the following topics:

- major grammar mistakes;
- spelling and punctuation;
- word choice inconsistencies;
- typos and cut-and-paste errors;
- formatting problems.

Handy tips:

- 1) Get rid of words that do not contribute to the meaning of a sentence, or words that over-complicate the structure.

Good example: *He works on marketing projects.*

Bad example: *He is the man who works on marketing projects.*

- 2) Keep your sentences short, with a simple grammatical structure. Where possible, break long sentences into two shorter ones
- 3) Avoid ambiguity, use the active voice

The active voice is a style of writing that cuts out vagueness and ambiguity. Again, if a human is unsure of the exact meaning of a phrase, then a machine translation engine is going to struggle, especially if your sentence has a double meaning.

Good example: *I will always remember my first time using a machine translation engine.*

Bad example: *My first time using a machine translation engine will always be remembered.*

- 4) Use the definite article, even when you don't want to. Try to specify nouns using "the", as a machine translation engine can struggle to distinguish between verbs and nouns. A lot of short nouns can also be verbs, for example, 'skip', 'bank', 'lodge' – these can cause further confusion if used without a definite article. Instructions and user manuals often omit the definite article.

Good example: *Build the engine. Train the engine. Use the engine.*

Bad example: *Build engine. Train engine. Use the engine.*

- 5) Avoid idioms / clichés / slang / colloquialisms / abbreviations

A machine translation engine may not convey the correct meaning of colloquial or idiomatic phrases, and the meaning may not make sense to international users.

Good example: *She didn't come into the office as she was not feeling well.*

Bad example: *She didn't come into the office as she was under the weather.*

5) Avoid the preposition – *of* more than three times within a sentence. Instead, phrases convert into multicomponent terms.

Good example: *The program of improvement of the quality of urban life of citizens.*

Bad example: *Urban life quality improvement program.*

SELF-ASSESSMENT

1. Which of the following is NOT a common error in machine translation?
 - a) missing words
 - b) incorrect verb tense
 - c) inconsistent terminology
 - d) perfect grammar and syntax
2. True or False: Machine translation is always 100% accurate.
 - a) True
 - b) False
3. Which of the following is a good strategy for proofreading machine translation?
 - a) reading the translation out loud
 - b) comparing the translation to the original text
 - c) using a spell-checker
 - d) all of the above
4. Which of the following is NOT a benefit of machine translation?
 - a) speed
 - b) cost-effectiveness
 - c) accuracy
 - d) personalisation
5. True or False: Machine translation is a replacement for human translators.
 - a) True
 - b) False

PRACTICAL PART

I. Preparation

Before reading, study the following vocabulary:

intrinsic agility

disruption

to smoothen

resilience

equitable

attenuators

facilities

to leverage
to utilize

II. Reading Text

3 steps to build 'adaptive' smart cities of the future

By 2050, 68% of the world's population is projected to live in urban areas. Smart cities can enhance society through innovation and digital transformation. In a world of continuous disruption, cities need to be dynamic and adaptive.

It's said that Rome wasn't built in a day, and there's a good reason. Cities are the most complex human-designed system on the planet. Today, 55% of the world's population lives in urban areas, with 68% projected to live in urban areas by 2050. In the United States, the number is already at 83% and is projected to reach 89% by 2050.

As such, cities represent perhaps the most important opportunity for innovation and digital transformation for our entire society and the planet. Through this transformation, we can deliver an urban future that is more sustainable and resilient but also more adaptive. In this article, we explore why the smart cities concept is necessary, but not sufficient and three steps for achieving the adaptive city of the future, one which works for everyone.

Why smart cities are not enough

While the concept of the smart city has long been the future vision for cities, even this is necessary, but not sufficient. Tech firms have long pitched the notion of intelligent sensors capturing billions of real-time data points to help cities become smart and able to respond to their surroundings. Use cases have included self-driving cars, smart lighting, and even smart trash cans. Sensors and data are indeed the building blocks, like cement, air, water, sand, and gravel are for concrete, but they represent raw ingredients, not the ultimate solution.

Why adaptive cities are the future

The smart cities concept is a helpful start, but the city of the future needs to go one critical step further. It needs to become an adaptive city able to respond dynamically to continuous change and disruption.

In recent years, disruption – in all its forms – has moved from the exception to the norm. Today's continuous disruption comes in the form of both technological disruptions, such as 3D printing, artificial intelligence (AI), machine learning (ML), autonomous vehicles, and digital twins, as well as business disruptions, such as pandemics, extreme weather events, climate change, unforeseen circumstances, and even wildly fluctuating governmental policies.

The smart city concept worked well for steady-state conditions, but in a world of continuous disruption, a key requirement for the city is to be able to respond to change and do so with intrinsic agility across both digital and physical aspects of its operating model. Agility in the digital ecosystem is nothing if the city remains brittle in its physical infrastructure.

An adaptive city balances lives and livelihoods, resilience and sustainability, and all the political, economic, social, technological, legal, and environmental conditions that need to be continuously analysed and acted upon.

These 5 cities are showing the world how to thrive in uncertain times

The one thing you can't forget to make cities more sustainable

Three steps for implementing the adaptive city

The path to the adaptive city is a multi-year journey. Like digital transformation, it can gain quick wins, so benefits are realised every step of the way. Three key steps to implementation relate to establishing the vision, designing for adaptability, and then building for intrinsic agility.

1. Establish the vision for the adaptive city

The vision for the adaptive city starts with its goals. These are clearly different for each city. For example, in the United States, Miami's needs in terms of resilience are far different from those of Dallas. Adaptability is key since it becomes an enabler to better support all goals. It means you can hit more of your goals more of the time for more of your stakeholders.

Dynamic curb management is one solution that enables city planners to smooth the flow of traffic and deliveries at the curbside using dynamic, data-driven curb management policies to make roadways more efficient and equitable. Two-hour parking spaces can become three-minute loading zones or dynamically priced delivery zones based on time of day or other factors.

Since the business goals for the city are continuously changing, the adaptive city will need to support dynamic optimisation of the goals themselves so that goals which are in mutual tension, such as traffic volume and CO2 emissions, can be proactively managed minute-by-minute.

2. Design for adaptability

To design for adaptability, it is important to focus the design on both digital and physical elements of the city's architecture. Software adaptability can be accomplished with approaches such as cloud computing, AI, ML, digital twins, software-defined networks, smart contracts, and platform business models.

Physical adaptability can be accomplished with approaches such as modular design and construction, multi-functional design, robotics and drones, and techniques which support rapid integration and interoperability or dynamic provisioning.

Examples include Ample's robotic battery swapping stations, which can swap out an electric vehicle's battery modules and packs in 10 minutes. Then there is "plug and play urbanism", which takes elements such as pedestrian bridges and makes them moveable as needed. The City of Fort Worth improved the streetscape with a moveable bridge across an 80-foot-wide creek. On a larger scale, Qatar's shipping-container football stadium can be taken apart and reassembled after matches.

Operational optimisation in parking facilities means not only doing more with less (e.g., during the pandemic when demand was down by as much as 90%), but also finding alternative approaches, such as converting garage levels to work-out facilities, providing space for pop-up retail, or staging areas for restaurant take-out and food deliveries.

This physical adaptability extends to specific assets in the built environment as well as entire structures. Multi-functional streetlights, such as those in the New Haven planned development community in Ontario, California, are equipped with USB charging ports, environmental sensors, Wi-Fi, wayfinding and more.

Discover

How is the World Economic Forum supporting the development of cities and communities globally?

3. Build for intrinsic agility

To build out or renew city infrastructure, these digital and physical enablers will provide much-needed intrinsic agility. By utilising them during the construction or renovation process, there is adaptability by design for their entire operational lifetime. A timely example is microgrids that can react to shocks, like a self-healing organism, if part of the grid is damaged.

In terms of integration, it will be important to pursue a platform business model where intellectual property from startups and other constituents can plug and play into the platform's services, much like the Apple App Store. The adaptive city may own and operate this platform as a public service, but it also enables permissionless innovation so that others, including citizens, can easily innovate and build on top.

It's time to redefine the role of each asset, from buildings, roads, cars, and even the human role in the adaptive city.

As part of this journey, the natural environment needs to be more blended with the hard-built environment: blending the green and grey. As a society, for too long, we have relied almost entirely on grey infrastructure without leveraging the benefits of the natural processes of green infrastructure, which has natural attenuators built in.

The adaptive city as a software company

With so many technical building blocks enabling so many use cases for the adaptive city of the future, perhaps the main challenge will be in the governance and orchestration of the platform business model, which brings all this to life. At this point, the adaptive city will become its own software company – quite literally helping to make the world a better place. It is said that “every company is a software company”, and perhaps now is the time for every city to become a software company as well.



From: <https://www.weforum.org/stories/2022/09/3-steps-build-adaptive-smart-cities-of-the-future/>

After-text exercises

1. Do a comprehension quiz:

1. By 2050, what percentage of the world's population is projected to live in urban areas?
 - a) 55%
 - b) 68%
 - c) 83%
 - d) 89%
2. Which concept goes beyond smart cities to respond dynamically to continuous change?
 - a) Green city
 - b) Sustainable city
 - c) Adaptive city
 - d) Digital city
3. What is a limitation of the smart city concept according to the text?
 - a) It focuses only on historical buildings
 - b) Sensors and data are necessary but not sufficient
 - c) It ignores technology
 - d) It eliminates all traffic
4. Which of the following is NOT an example of technological disruption mentioned in the text?
 - a) Artificial intelligence (AI)
 - b) 3D printing
 - c) Autonomous vehicles
 - d) Manual labor
5. What does “dynamic curb management” help city planners do?
 - a) Remove all cars from streets
 - b) Optimize traffic flow and deliveries at the curbside

- c) Build taller skyscrapers
 - d) Install more green parks
6. Which of the following is a physical adaptability approach in cities?
- a) Cloud computing
 - b) Modular design and construction
 - c) Machine learning algorithms
 - d) Software-defined networks
7. What is an example of multi-functional streetlights mentioned in the text?
- a) Only lighting the streets
 - b) Equipped with USB charging ports, environmental sensors, Wi-Fi, and wayfinding
 - c) Lighting streets and parks only
 - d) Only sensors for traffic
8. Microgrids in adaptive cities act like:
- a) Traditional power grids
 - b) Self-healing organisms that react to shocks
 - c) Simple electrical wires
 - d) Solar panels only
9. What is meant by “blending the green and grey” in urban planning?
- a) Mixing different paint colours on buildings
 - b) Integrating natural environments with built infrastructure
 - c) Making roads and parks the same color
 - d) Replacing all buildings with trees
10. According to the text, what new role might cities take in the future?
- a) Becoming software companies that integrate digital and physical systems
 - b) Eliminating all technology in urban areas
 - c) Focusing only on residential buildings
 - d) Building only industrial zones

2. Answer the questions:

1. What percentage of the world’s population currently lives in urban areas?
2. What is the main difference between a smart city and an adaptive city?
3. Name two technological disruptions that influence urban planning today.
4. How does dynamic curb management improve city traffic and deliveries?
5. Give an example of physical adaptability in urban infrastructure.
6. What does “blending the green and grey” mean in the context of adaptive cities?
7. Why might cities in the future be considered like software companies?

3. True/false:

1. By 2050, 68% of the world’s population is projected to live in urban areas.
2. Smart cities are sufficient on their own to respond to continuous disruption.
3. Adaptive cities can dynamically respond to technological and environmental changes.

4. Autonomous vehicles and 3D printing are examples of business disruptions.

5. Multi-functional streetlights can include USB ports, environmental sensors, and Wi-Fi.

6. Microgrids in adaptive cities are rigid and cannot adjust to shocks.

7. Blending green and grey means integrating natural environments with built infrastructure.

4. Match the terms with their definitions:

Words:

1. adaptive city
2. dynamic curb management
3. microgrid
4. modular design
5. digital twins
6. sustainable development
7. multi-functional

Definitions:

- a. A system that allows electricity to respond flexibly to disruptions.
- b. A city that can respond quickly and efficiently to continuous changes.
- c. Planning and building cities to meet present needs without harming the future.
- d. A flexible design approach where components can be rearranged or replaced easily.
- e. Street or traffic management policies that adjust in real time to optimise flow.
- f. Describes objects or systems that can perform several functions at once.
- g. Digital replicas of physical assets or systems used for monitoring and planning.

5. Video: watch a video “The future of smart cities” (<https://www.youtube.com/watch?v=pMlqNKBqhXw>). Write down breakthrough technologies.

5. Writing. Edit it to make the English style concise, natural, and professional.

The program of development of sustainable urban mobility of the city of Lviv is a component of the strategy of improvement of the conditions of life of the population of the city. The main goal of the program is the reduction of the number of cars and the increase of the use of public transport and bicycles. The policy of management of the traffic of the central district of the city includes the introduction of the system of control of parking, the modernisation of the infrastructure of pedestrian zones, and the implementation of projects of regulation of road traffic. The plan of development of the transport of the region also takes into account the needs of the protection of the environment and the reduction of the level of air pollution.

7. Speaking: Planning a smart city.

Your city council has decided to develop a new smart city district. Discuss and decide how to make the city efficient, sustainable, and adaptive.

- Discuss the main priorities for the new smart city district.
- Decide on 3 main initiatives that will make the city adaptive and sustainable.
- Identify potential challenges and suggest solutions (e.g., high costs, public resistance, environmental concerns).

Language Support / Useful Phrases:

“Our priority should be...”

“We need to consider both technology and environment.”

“Dynamic curb management can help reduce traffic congestion.”

“Digital twins will allow us to monitor the city in real time.”

“Residents need affordable housing and accessible public services.”

“We might face challenges such as...”

8. Make a presentation on the future of cities

UNIT 9. ZONING



THEORETICAL PART GRAMMAR PECULIARITIES OF TECHNICAL TEXTS

Read and check your understanding.

Technical texts have their own set of grammar peculiarities that distinguish them from other types of texts. Some of these peculiarities include:

Passive voice: Technical texts tend to use the passive voice more often than other types of texts. This is because technical writing is often focused on processes and procedures rather than on people or actions. E.g. "The experiment was conducted under controlled conditions to ensure accuracy."

Gerund. The gerund is a verb form that functions as a noun and is created by adding "ing" to the base form of the verb. In technical texts, gerunds are commonly used to describe ongoing actions, processes, or activities. E.g. "The software automates the process of converting raw data into visualisations." Gerunds can also be used to describe actions that are happening simultaneously. For example, "The machine is constantly monitoring the temperature and adjusting accordingly" uses "monitoring" as a gerund to describe an action that is happening simultaneously with the action of adjusting the temperature.

Additionally, gerunds can be used to create lists of actions or to group similar actions. For example, "The design process includes researching customer needs, creating prototypes, and testing functionality" uses gerunds to group the various actions involved in the design process.

Present tense: Technical texts often use the present tense to describe processes and procedures that are repeated.

Specialised vocabulary: Technical texts rely heavily on specialised vocabulary, which may include technical terms, acronyms, and jargon. These terms may not be familiar to the general reader, but they are necessary for communicating technical information effectively.

Sentence structure: Technical texts tend to use longer and more complex sentences than other types of texts. This is because technical writing often requires precise and detailed explanations of complex concepts.

Abbreviations: Technical texts often use abbreviations to save space and simplify language. However, it's important to define abbreviations when they are first introduced to ensure that readers understand their meaning. *CTS - coolant through spindle, HRSG - Heat Recovery Steam Generator, LHV - Lower Heating Value, NGCC - Natural Gas Combined Cycle, O&M - Operations and Maintenance, PC - Pulverised Coal, SCR - Selective Catalytic Reduction, ST - Steam Turbine, CAM - computer-aided manufacturing, VOC - Volatile Organic Compounds, ATC - automated tool changer*

Numerical information: Technical texts often contain numerical information, which must be presented clearly and accurately. This may include measurements, statistics, and other quantitative data. Here are some common numerical terms and measurements used in heat power terminology: *BTU - British*

Thermal Unit - A measure of heat energy equivalent to the amount of energy needed to raise the temperature of one pound of water by one degree Fahrenheit; MW - Megawatt - A unit of power equal to one million watts; GJ - Gigajoule - A unit of energy equivalent to one billion joules; kg/s - Kilograms per second - A unit of mass flow rate, commonly used to express the flow rate of fluids or gases, % - Percent - A unit of proportion, equal to one part in 100; Efficiency - A measure of how much of the input energy is converted into useful output energy, expressed as a percentage; Heat rate - The amount of heat energy required to generate one unit of electricity, typically measured in BTUs per kilowatt-hour (BTU/kWh), Pressure - The force exerted per unit area, commonly measured in pounds per square inch (psi) or kilopascals (kPa); Temperature - The degree of hotness or coldness of a substance, commonly measured in degrees Celsius (°C) or Fahrenheit (°F), Flow rate - The amount of fluid or gas that passes through a given area in a given amount of time, commonly measured in cubic meters per second (m³/s) or cubic feet per minute (CFM).

Standardised formats: Technical texts may follow standardised formats, such as the format for a scientific research paper or the format for an engineering report. These formats help to organise information and make it easier to understand.

SELF-ASSESSMENT

- 1) Which sentence is correctly written in passive voice?
 - a) The company designs new products every year.
 - b) New products are designed by the company every year.
- 2) Which sentence is correct?
 - a) You can improve performance by updating the codebase
 - b) You can improve performance by updating the codebase
- 3) What statement is correct?
 - a) Use slash notation in technical texts to express combined units. For example, "m/s" for meters per second
 - b) Don't use slash notation in technical texts to express combined units. For example, "m/s" for meters per second
- 4) What sentence is correct:
 - a) A process can be improved by changing a technology.
 - b) One can improve a process to change a technology.
- 5) Technical texts tend to use shorter sentences.
 - a) True
 - b) False

PRACTICAL PART

I.Preparation

Before reading, study the following vocabulary:

Zoning Ordinance
regulations
impact

neighbourhood
restrictions
to tailor
to hinder
density
traffic congestion
blueprint

Reading a text

Urban zoning and how it can make cities liveable

Ever noticed how everything in your neighbourhood is nicely laid out?

Houses cluster together, charming cafes and restaurants line certain streets where businesses thrive, and industrial factories are hidden away, out of sight. None of this is by chance; it's all down to zoning.

These invisible lines that run through our cities are essential to shaping liveability, and understanding zoning regulations is crucial for anyone who cares about the future of urban landscapes. This post dissects just how important zoning laws are to urban planning. Read on to explore its impact on our cities, the pitfalls of poor regulation, and the exciting possibilities for the future.

What is zoning? Zoning regulations (also called zoning ordinances or zoning codes) are rules that tell you how a piece of land can be used. Local governments and city councils establish these laws to ensure development aligns with the community's vision. Zoning is defined as "the act or process of partitioning a city, town, or borough into zones reserved for different purposes", such as residential zones, commercial areas, and mixed-use zones.

When you picture a city as a jigsaw puzzle, specific regulations help decide which pieces fit together and which are best kept apart. In essence, zoning laws ensure a sense of order and prevent troubling clashes from ever happening, like a nightclub opening next door to a home in a residential area. Beyond creating orderly separation, zoning ordinances can also be an urban planning tool to promote walkable, liveable communities. Flexible zoning laws mean that residential areas can be integrated with shops, workplaces, and amenities, all within walking distance. In such mixed-use zones, you'll never be more than a quick stroll away from getting groceries or grabbing a coffee!

Land-use planning is also crucial in preserving open spaces for public use and environmental benefit. It ensures that cities maintain parks and other public services essential for a community's long-term vision.

Despite all the goodness they can unlock, too strict zoning regulations can create a car-dependent population. Needless to say, this paves the way for other problems.

History of zoning

Urban land-use planning is a relatively new concept. In the early 1900s, cities were an organisational mess amidst industrialisation and immense population growth.

Factories with harmful pollution levels commonly sprung up near schools, and noisy industrial work routinely disrupted everyday life. Concerns were growing, and change was needed.

What was lacking was a set of regulations for what could be built where, including specific regulations for different types of zones.

Germany and Sweden were some of the first European countries to adopt land-use planning practices and focused on restricting the location of polluting factories. In 1916, New York City was the first city to enact traditional zoning systems to structure the urban environment. The city's new single-use code separated land into residential, commercial, and industrial zones.

After World War II, Europe's approach split from the United States' growing reliance on rigid zoning codes.

In Europe, zoning regulations focused on achieving specific goals like environmental protection, historic preservation, and promoting vibrant, mixed-use communities. This flexible approach stood in contrast to the strict single-use zoning in most US cities.

Single-use zoning became the core idea of zoning laws in the US and a significant contributor to urban sprawl in the following years. The obsession with single-family homes increased car dependency and limited walkability.

After realising the pitfalls of single-use zoning, local zoning laws today are changing. They're now striving to balance order, liveability, sustainability, and community character with mixed-use developments.

Zoning examples from around the world

While urban land-use planning is common around the globe, the laws, restrictions, and types of zoning differ from city to city. There is no one-size-fits-all approach, and zoning regulations are often tailored to match a city's needs.

Let's explore some real-life zoning examples where zoning laws have played a significant role in a city's landscape:

Amsterdam, Netherlands

Amsterdam's land-use planning system is modern in the sense that it prioritises mixed-use functionality.

With industrial factories restricted to dedicated zones on the city's outskirts, Amsterdam's core is fluid, allowing certain businesses and manufacturing to rub shoulders with residential real estate.

This creates lively, compact neighbourhoods where residents can live, work, shop, and access amenities on foot or bike without being dependent on a vehicle.

Amsterdam's zoning regulations embrace the city's cycling culture, and this has been the case for many years. Even Amsterdam's extension plan in 1935 was designed so that new neighbourhoods were no more than a 30-minute bicycle ride from the city centre.

Hong Kong, China

Given Hong Kong's limited land capacity, city planners prioritise efficient land use.

As such, Hong Kong's local zoning laws designate most land for high-density uses, particularly residential high-rise buildings. By allowing for increased building

heights, building upwards accommodates a larger population within a small area. This approach aids Hong Kong's reputation as a compact city with necessities within walking distance.

Paris, France

Parisian zoning ordinance encompasses several goals, including becoming a 15-minute city. However, one of the most unique goals is to preserve views of historic landmarks such as the Eiffel Tower and Notre Dame Cathedral.

Preserving landmark views is achieved through strict height restrictions in designated zones. This unique zoning example safeguards views of landmarks from new developments and ensures iconic structures remain prominent cityscape features.

Different types of zoning ordinances:

Residential zoning

Residential zones are designated for housing and can include everything from detached single-family homes to high-density apartment complexes.

Commercial zoning

Commercial zoning is a designated area specifically for business activities. The specific types of businesses allowed in the zone can depend on local guidelines, but they usually involve retail stores, restaurants and cafes, offices, banks and professional services, hotels, and entertainment facilities.

Industrial zoning

As the name suggests, industrial zones are for industrial uses such as manufacturing premises, warehouses, and distribution centres. These are usually confined to a city's peripheries.

Single-use zoning

Also known as Euclidean zoning, single-use zoning restricts land to one sole use. This strict land-use planning, typically seen in the US, creates a clear separation between residential and commercial areas, leading to car-dependent communities where pedestrian infrastructure is often neglected.

Mixed-use zoning

Mixed-use zoning allows for a blend of residential and commercial development. These zones, commonly seen across European cities, help create vibrant, walkable neighbourhoods where residents can live, work, and shop nearby.

Pros of zoning

Land-use planning plays a vital role in shaping our cities, and these are the three main benefits of zoning regulations to urban development.

1) Prevents sporadic developments

Zoning laws act as a blueprint for a city and show exactly where residential, commercial, and industrial property can be located. With perimeters in place, they ensure that new developments complement the surroundings and prevent a mismatch of buildings from ever happening.

2) Improves quality of life

All in all, well-executed land-use planning can improve the quality of life. By using zoning regulations to limit disturbances like air pollution and noise levels,

increasing green spaces, and making amenities accessible on foot, zoning laws can contribute to a more liveable environment.

3) Protects property value

Zoning ordinances safeguard the neighbourhood's character, protecting your property's value. You can only imagine how a noisy industrial site would diminish your property value if it sprouted within hearing distance!

Cons of zoning

Land-use planning isn't without limitations and, if executed poorly, can lead to a succession of problems.

2) Limited flexibility

Single-use zoning, which is notoriously rigid, can hinder creative developments. For example, a derelict industrial area might be a prime location for new housing units, but zoning red tape could hinder the project.

3) Environmental costs

Separating housing, businesses, and industry into designated zones can harm the environment. Since amenities and work are spaced away from residential areas, it forces car dependence. With no other option for running errands and commuting to work, daily car trips add to a city's air pollution and traffic congestion.

4) Lower housing options

Strict single-use zoning typically prioritises detached family homes, which limits the availability of apartments or more affordable housing. This can push lower-income residents out as demand increases.



From: <https://bolt.eu/en/blog/urban-zoning/>

After-reading exercises

1. Do a comprehension quiz:

1. What is the main purpose of zoning regulations?
 - a) to make cities taller
 - b) to control how land can be used
 - c) to reduce taxes

- d) to increase car use
- 2. What is another name for zoning regulations?
 - a) land-use conflicts
 - b) zoning codes or ordinances
 - c) urban heat islands
 - d) smart growth
- 3. What is a common drawback of strict single-use zoning?
 - a) encourages walking
 - b) leads to car-dependent communities
 - c) increases green spaces
 - d) reduces air pollution
- 4. Which type of zoning combines residential and commercial areas?
 - a) Single-use zoning
 - b) Industrial zoning
 - c) Mixed-use zoning
 - d) Commercial zoning
- 5. How does Amsterdam's zoning support livability?
 - a) by restricting all businesses from the city center
 - b) by prioritising mixed-use areas and cycling culture
 - c) by allowing factories to be built anywhere
 - d) by reducing residential areas
- 6. What is a goal of Parisian zoning ordinances?
 - a) increasing car dependency
 - b) preserving views of historic landmarks
 - c) allowing factories near homes
 - d) expanding industrial zones in the city centre
- 7. Which of the following is an example of industrial zoning?
 - a) parks and gardens
 - b) warehouses and manufacturing premises
 - c) high-rise apartments
 - d) cafes and offices
- 8. What does single-use (Euclidean) zoning restrict?
 - a) the size of buildings
 - b) land to one sole purpose
 - c) the height of trees
 - d) public access to streets
- 9. How can zoning improve quality of life?
 - a) by separating residential areas from commercial amenities
 - b) by increasing traffic congestion
 - c) by limiting disturbances like noise and pollution
 - d) by creating more industrial areas in neighbourhoods
- 10. What is a potential environmental problem of strict zoning?
 - a) encourages walking and cycling
 - b) forces long car trips, increasing air pollution
 - c) reduces industrial activity

d) protects historic landmarks

2. Answer the questions:

1. What is the main purpose of zoning in cities?
2. How does mixed-use zoning contribute to walkable neighbourhoods?
3. Why did single-use zoning become common in the United States?
4. How do zoning regulations protect property values?
5. What are some environmental drawbacks of strict zoning laws?
6. How does Amsterdam's zoning system support cycling culture?
7. Why is it important for zoning regulations to be flexible today?

3. True/false:

1. Zoning laws are used to control how land can be used in a city.
2. Single-use zoning encourages car dependency and reduces walkability.
3. Mixed-use zoning separates residential and commercial areas. Parisian zoning ordinances include preserving views of historic landmarks.
4. Industrial zones are usually located in the city centre.
5. Strict zoning laws can limit affordable housing options.
6. Zoning regulations have no impact on environmental sustainability.

4. Open the brackets and put the verb in the correct passive form.

1. The foundation (pour) last week by the construction team.
2. The plans for the new building (approve) by the architect yesterday.
3. The steel beams (install) before the concrete floor is laid.
4. The project (complete) on schedule despite the weather delays.
5. The building (inspect) regularly to ensure it meets safety standards.
6. The permits for the construction (issue) by the local authorities.
7. The walls (construct) using reinforced concrete.
8. The crane (use) to lift the heavy materials to the upper floors.
9. The final inspection (conduct) next week to check the quality of the work.
10. The bricks for the wall (deliver) by truck earlier this morning.

5. Speaking. Choose either Zaporizhzhia or Kyiv and analyse its zoning and urban planning according to the following plan:

- 1) Discuss the current zoning of your city. Identify strengths and weaknesses.
- 2) Suggest three improvements to make neighbourhoods more liveable, sustainable, and walkable.
- 3) Debate how to balance residents' needs, business interests, and environmental concerns.
- 4) Conclude with a short plan or decision to present to the city council.

6. Presentation. Make a presentation on urban zoning practices from various cities worldwide.

UNIT 10. TYPES OF BUILDINGS

THEORETICAL PART



MAKING CONTRACTS

Read and check your understanding.

A **contract** is a binding and enforceable legal agreement between two or more parties. Important features of every contract include:



Basic information: Legal names and/or business names of the involved parties, their addresses, and a description of the property or service being exchanged for money or other consideration.

Agreement: This is a statement of the terms of the contract, such as the rights and responsibilities of all involved parties. If the contract records a loan, this section might cover the payment terms.

Specific considerations: This is a more detailed description of the property and / or terms, like the condition of the item, what the parties will and will not be responsible for, and what, if any, warranty or guarantees exist.

Dates: Every agreement notes the date of sale, dates for any warranties in effect, and due dates for payment installments, if any.

Null and void: This section explains how the contract can be nullified if there is a breach of contract.

Writing a contract requires careful consideration of legal language and specific requirements. Here are some general steps to follow when writing a contract:

Identify the parties involved: Begin by identifying the parties involved in the contract, including their full legal names and addresses. This will ensure that the contract is binding and enforceable.

Define the terms and conditions: Clearly define the terms and conditions of the agreement. This includes the scope of work or services to be provided, payment terms, deadlines, and any other relevant details. Be sure to use clear and concise language.

Include legal language: Contracts typically include legal language, such as indemnification clauses, limitations of liability, and dispute resolution provisions. Consult with a lawyer to ensure that these clauses are appropriate and enforceable.

Include signatures and dates: Once the contract is complete, have all parties sign and date it. This ensures that everyone has agreed to the terms and conditions. **Keep a copy for your records:** Be sure to keep a copy of the contract for your records. This can be important if any disputes arise in the future.

It's important to note that contract writing can be complex and vary based on the specific industry and legal requirements. It's recommended to consult with a lawyer or legal professional when drafting contracts to ensure that they are legally binding and enforceable.

Sample contract

Brighton, England April 10, 2009 Continental Equipment Plc, Brighton, England, hereinafter referred to as "the Seller", on the one part, and TST Systems Ltd., Kyiv, Ukraine, , hereinafter referred to as "the Buyer", on the other part, have concluded the present Contract as follows: <i>1. Subject of the Contract</i> 1.1. The Seller has sold and the Buyer has bought the machinery, equipment, materials, and services ("Equipment") as listed in Appendix 1 being an integral part of this Contract. <i>2. Prices and Total Value of the Contract</i> 2.1. The Total Contract Value is as follows: Equipment and engineering FOB U.K. port + documentation <table style="width: 100%;"> <tr> <td style="width: 80%;">Supervision, start-up and training</td> <td style="width: 20%; text-align: right;">£ _____</td> </tr> <tr> <td>Spare and wear parts</td> <td style="text-align: right;">£ _____</td> </tr> <tr> <td>Freight</td> <td style="text-align: right;">£ _____</td> </tr> <tr> <td>Total price CIF Odessa</td> <td style="text-align: right;">£ _____</td> </tr> <tr> <td>Discount</td> <td style="text-align: right;">£ _____</td> </tr> <tr> <td>Total Contract Value</td> <td style="text-align: right;">£ _____</td> </tr> </table> 2.2. The prices are understood to be CIF Odessa including cost of packing, marking, loading on board a ship, stowing and fastening the equipment in the hold, and the cost of the materials used for this purpose. 2.3. The prices are firm for the duration of the Contract and shall not be subject to any revision except on account of any mutually agreed changes or modifications to equipment specification and/or quantities listed in Appendix 1 to this Contract. <i>3. Time of Delivery</i> 3.1. The Equipment specified in Appendix 1 of the present Contract is to be delivered within two (2) months from the date of opening the Letter of Credit specified in Clause 4.1 of this Contract. 3.2. The delivery date is understood to be the date of the clean Bill of Lading issued in the name of the	Supervision, start-up and training	£ _____	Spare and wear parts	£ _____	Freight	£ _____	Total price CIF Odessa	£ _____	Discount	£ _____	Total Contract Value	£ _____	Брайтон, Англія 10 квітня, 2009 р. Компанія Continental Equipment Plc, Брайтон, Англія, яка надалі іменується „Продавець”, з однієї сторони, і компанія ТСТ Системз Лтд.Ю Київ, Україна, яка надалі іменується „Покупець”, з іншої сторони, уклали цей контракт про наступне: <i>1. Предмет Контракту</i> 1.1. Продавець продав, а Покупець купив машини, обладнання, матеріали і послуги ("Обладнання"), перераховані у Додатку 1, який є невід'ємною частиною цього Контракту. <i>2. Ціни і загальна сума Контракту</i> 2.1. Загальна сума Контракту складає: Обладнання і техніка на умовах FOB (порт Великобританії) +документація <table style="width: 100%;"> <tr> <td style="width: 80%;">Супровід, запуск і підготовка персонал</td> <td style="width: 20%; text-align: right;">£ _____</td> </tr> <tr> <td>Запасні і зношені деталі</td> <td style="text-align: right;">£ _____</td> </tr> <tr> <td>Фрахт судна</td> <td style="text-align: right;">£ _____</td> </tr> <tr> <td>Загальна сума на умовах CIF Одеса</td> <td style="text-align: right;">£ _____</td> </tr> <tr> <td>Знижка</td> <td style="text-align: right;">£ _____</td> </tr> <tr> <td>Загальна сума Контракту</td> <td style="text-align: right;">£ _____</td> </tr> </table> 2.2. Ціни розраховуються на умовах CIF Одеса, включаючи вартість упаковки, маркування, завантаження на борт судна, розміщення і кріплення в трюмі, а також вартість матеріалів, які використовуються для цієї мети. 2.3. Ціни залишаються незмінними протягом всього строку дії Контракту і можуть бути переглянуті лише у випадку взаємно погоджених змін у специфікації обладнання або його модифікації, а також змін кількості його складових частин, вказаних у Додатку 1 до цього Контракту. <i>3. Срок поставки</i> 3.1. Обладнання, перераховане у Додатку 1 до даного Контракту, повинно бути поставлене протягом двох (2) місяців з моменту відкриття акредитиву, вказаного у п.4.1 даного Контракту. 3.2. Датою поставки Обладнання вважається дата видачі чистого коносаменту із вказівкою імені Покупця	Супровід, запуск і підготовка персонал	£ _____	Запасні і зношені деталі	£ _____	Фрахт судна	£ _____	Загальна сума на умовах CIF Одеса	£ _____	Знижка	£ _____	Загальна сума Контракту	£ _____
Supervision, start-up and training	£ _____																								
Spare and wear parts	£ _____																								
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Загальна сума на умовах CIF Одеса	£ _____																								
Знижка	£ _____																								
Загальна сума Контракту	£ _____																								

Buyer, destination Odessa, Ukraine. 4. Terms of Payment 4.3. Within thirty (30) days from the date of signing this Contract, the Buyer is to open in favour of the Seller an irrevocable confirmed Letter of Credit with CityBank, London, for hundred per cent (100%) of the total contract value. The Letter of Credit is to be valid for three (3) months. 4.2. Payment from this Letter of Credit at the rate of hundred per cent (100%) of the total contract value is to be effected in GB pounds against the following shipping documents: 4.2.1. Original Bill of Lading issued in the name of the Buyer, destination Odessa, Ukraine. 4.2.2. Shipping Specification. 4.2.3. Certificate of Quality. 4.2.4. Certificate of Origin. 4.2.5. Packing List. 4.2.6. Insurance Policy. 5. Technical Documentation 5.1. Within five (5) days from the delivery date the Seller shall send two (2) sets of the technical documents as listed in Appendix 2 to the address of the Buyer. 5.2. All instructions on the drawings are to be in English, with all the instructions contained in Items 1,2,3, and 4 of Appendix 2 translated into Ukrainian. 6. Guarantee of the Quality of the Equipment. 6.1. The guarantee period is twelve (12) months from the date of the start-up of the Equipment, that is reflected in an appropriate Act signed by the representatives of the Parties to the present Contract, but not more than eighteen (18) months from the date of delivery of the Equipment. 6.2. If the Equipment proves to be defective or faulty during the guarantee period, the Seller has at its expense at the choice of both Parties either to remedy the defects or to replace the faulty equipment with new equipment of good quality which is to be delivered without delay to the port of delivery. 7. Packing 7.1. The Equipment is to be shipped in export sea packing suitable for the type of equipment delivered. Packing should also be suitable for transshipment in transit and reasonable long storage of the Equipment. 7.2. Each container is not to exceed the following dimensions: length - 2,500 mm, width = 2,500 mm, height = 2,500 mm. 7.3. The Seller is responsible to the Buyer for any damage to the Equipment resulting from inadequate packing of the equipment. 8. Marking 8.1. All the containers are to be marked on three (3) sides. Each container should bear the following markings made in indelible paint (in Ukrainian and	і кінцевого порту призначення - Одеса, Україна. 4. Умови оплати 4.1. Протягом тридцяти (30) днів з моменту підписання цього Контракту Покупець повинен відкрити у CityBank (Лондон) на ім'я Продавця безвідкличний підтверджений акредитив на сто відсотків (100%) від загальної суми Контракту. Акредитив дійсний протягом трьох (3) місяців. 4.2. Платіж за цим акредитивом у розмірі ста відсотків (100%) від загальної суми Контракту здійснюється в англійських фунтах проти пред'явлення наступних відвантажувальних документів: 4.2.1. Оригіналу коносамент та, виписаного на ім'я Покупця, із вказівкою кінцевого порту призначення Одеса (Україна). 4.2.2. Відвантажувальної специфікації. 4.2.3. Сертифікату якості. 4.2.4. Сертифікату походження товару. 4.2.5. Пакувального списку. 4.2.6. Страхового поліса. 5. Технічна документація 5.1. Протягом п'яти (5) днів з моменту поставки Продавець повинен надіслати на адресу Покупця два (2) комплекти технічних документів, перерахованих у Додатку 2. 5.2. Усі пояснення на кресленнях повинні бути зроблені англійською мовою. Повинні бути також надані переклади українською мовою усіх пояснень на кресленнях, що входять у п.п.1, 2, 3 і 4 Додатку 2. 6 Гарантія якості Обладнання 6.1. Гарантійний строк складає дванадцять (12) місяців з моменту запуску Обладнання, що фіксується у відповідному Акті, підписаному уповноваженими представниками сторін, які укладають цей Контраст, але не більше вісімнадцяти (18) місяців з дати поставки Обладнання. 6.2. Якщо Обладнання вийде з ладу протягом гарантійного строку, Продавець повинен за власний рахунок і за вибором обоє сторін або усунути наявні дефекти, або замінити обладнання, яке вийшло з ладу, новим обладнанням відповідної якості, яке повинно бути без затримки доставлене У порт призначення. 7. Пакування 7.1. Обладнання має бути поставлене у морський експортний упаковці, призначений для транспортування обладнання даного типу. Упаковка повинна також бути придатною для транзитних перевезень і для зберігання Обладнання протягом розумного строку. 7.2. Кожний контейнер за розмірами не повинен перевищувати наступні габарити: довжина — 2 500 мм, ширина — 2 500 мм, висота — 2 500 мм. 7.3. Продавець несе відповідальність перед Покупцем за будь-які пошкодження Обладнання, що сталися через його неправильне пакування. 8. Маркування 8.1. Всі контейнери маркуються з трьох (3) сторін. На кожному контейнері повинні бути нанесені незмивною фарбою наступні написи (українською і
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English): Contract No. Seller: Continental Equipment Plc (Address) Buyer: TST Systems Ltd. (Address) Railway Station of Destination: Kyiv Container No.: Gross weight: ____ kg Net weight: ____ kg Case dimensions in cm (length x width x height) 8.2. If a case requires special handling it should bear additional marks: "Fragile", "Top" or "This side up", etc. 9. <i>Shipping Instructions and Notifications</i> 9.1. Within twenty-four (24) hours after shipment, the Seller is to inform the Buyer by fax regarding the date of shipment, the Bill of Lading number, number of containers, their weight, the vessel name. 10. <i>Insurance</i> 10.1. The Seller is to take care of and cover expenses for insurance of the Equipment under the Contract from the moment of its dispatch up to the moment of its arrival at the port of Odessa. 11. <i>Sanctions</i> 11.1. In the event of delay in delivery of the Equipment the Seller is to pay the Buyer a penalty at the rate of 1.0% of the total contract value for every week of delay. However, the total amount of penalty for delay in delivery is not to exceed 10% of the total contract value. 11.2. While calculating penalty for delay, the amount of days comprising over half of a calendar week is considered to be a full week. 12. <i>Force Majeure</i> 12.1. The Parties are released from their responsibility for partial or complete non-execution of their liabilities under the Contract should this non-execution be caused by the force majeure circumstances including, but not limited to: fire, flood, earthquake, and if these circumstances have had a direct damaging effect on the execution of the present Contract. 12.2. The Party which is unable to fulfil its obligations under this Contract is to inform the other Party within ten (10) days from the beginning of force majeure circumstances. 13. <i>Arbitration</i> 13.1. The Seller and the Buyer will take all possible measures to settle amicably any disputes or differences which may arise out of the present Contract or in connection with it. 13.2. If the Parties do not come to an agreement, all the disputes and differences are to be submitted for Arbitration in Stockholm, Sweden, in accordance	англійською мовами): Контракт № Продавець: Continental Equipment Plc (Адреса) Покупець: TST Systems Ltd. (Адреса) З/д станція призначення: Київ Контейнер № : Вага брутто: ____ кг Вага нетто: ____ кг Розміри контейнера у см (довжина x ширина x висота) 8.2. Якщо контейнер потребує спеціального поводження, то на ньому повинно бути нанесене додаткове маркування: "Крихкий", "Вверх", або "Тут верх" тощо. 9. <i>Інструкції і повідомлення про відвантаження</i> 9.1. Протягом двадцяти чотирьох (24) годин після відвантаження обладнання Продавець повинен повідомити Покупця факсом про дату відвантаження, номер коносаменту, кількість контейнерів, їх вагу, назву судна. 10. <i>Страхування</i> 10.1 Продавець здійснює страхування Обладнання, що поставляється у відповідності до цього Контракту, і покриває усі пов'язані з цим витрати з моменту відвантаження Обладнання і до моменту прибуття його у порт Одеси. 11. <i>Санкції</i> 11.1 У випадку затримки поставки Обладнання Продавець повинен виплатити Покупцеві пеню у розмірі 1% від загальної суми Контракту за кожний тиждень затримки поставки. При цьому, загальна сума пені за затримку поставки Обладнання не повинна перевищувати 10% від загальної суми Контракту. 11.2. Під час розрахунку пені за затримку поставки Обладнання кількість днів, що перевищує половину календарного тижня, вважається повним тижнем затримки. 12. <i>Форс-мажор</i> 12.1. Сторони звільняються від відповідальності за повне або часткове невиконання своїх обов'язків за цим Контрактом, якщо таке невиконання було викликано форсмажорними обставинами, які включають, але не обмежуються такими, причинами, ЯК: пожежа, повінь, землетрус, її якщо дані обставини малий безпосередній вплив на можливість виконання цих зобов'язань. 12.2. Сторона, яка не може виконати своїх зобов'язань за даним Контрактом, повинна протягом десяти (10) днів після початку дії форсмажорних обставин повідомити іншу сторону про їх наявність. 13. <i>Арбітраж</i> 13.1. Покупець і Продавець вживають усі можливі заходи для врегулювання спорів розбіжностей, які можуть виникнути під час виконання цього Контракту або у зв'язку з його виконанням. 13.2. Якщо сторони не можуть дійти згоди, усі спори і розбіжності передаються на розгляд до арбітражного
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with the rules and regulations of the Chamber of Commerce in Stockholm and applying the substantive laws of Sweden. 14. Other Terms 14.1. The Seller upon written consent of the Buyer shall be permitted to substitute equipment of comparable quality and conforming to the technical requirements for any item of equipment that may not be available for one reason or another. 14.2. Any changes, amendments or supplements to the terms and conditions of this Contract shall be valid only if set forth in a written document duly signed by authorized representatives of both Parties to the present Contract. 14.3. After the Contract has been signed all the preliminary agreements, discussions and correspondence between the Parties concerning this Contract are to be considered null and void if conflicting with this Contract. 14.4. The Contract becomes effective and comes into full force from the date of signing. 15. Legal Addresses of the Parties SELLER (ПРОДАВЕЦЬ): Continental Equipment Plc 9 North Road Brighton BN1 5JF England for and on behalf of the Seller (від імені та за дорученням Продавця) Alfred Rogers Chairman (Президент)	суду у Стокгольмі (Швеція) згідно з правилами і положеннями Торгової Палати Стокгольму і із застосуванням відповідних законів Швеції. 14. Інші умови 14.1. За наявності письмової згоди Покупця Продавець може здійснити заміну тих чи інших частин Обладнання, яких з тієї чи іншої причини нема в наявності, на інше обладнання порівняної якості, яке задовольняє технічним вимогам. 14.2. Будь-які зміни, поправки і доповнення до умов цього Контракту вважаються дійсними тільки у тому випадку, якщо вони зроблені письмово і належним чином підписані уповноваженими представниками сторін. 14.3. Після підписання Контракту всі попередні угоди, домовленості та листування між сторонами, які уклали цей Контракт, стають недейсними, якщо вони суперечать положенням цього Контракту. 14.4. Контракт набуває чинності і вступає в силу з датийого підписання. 15. Юридична адреса сторін ПОКУПЕЦЬ (BUYER): TST Systems Ltd. P.O.Box 171 Kyiv 253100 Ukraine від імені та за дорученням Покупця (for and on behalf of the Buyer) Віктор Клименко Коммерційний директор (Commercial Director)
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SELF-ASSESSMENT

- What is the purpose of including legal language in a contract?
 - To make the contract longer and more formal
 - To make the contract legally binding and enforceable
 - To make the contract more difficult to understand
- When writing a contract, what should be included in the terms and conditions section?
 - The names of the parties involved
 - Payment terms
 - The scope of work or services to be provided
 - All of the above
- Why is it important to use clear and concise language in a contract?
 - To make the contract more formal
 - To make the contract easier to read and understand
 - To make the contract more legally binding
- What is the purpose of having all parties sign and date a contract?
 - To make the contract legally binding and enforceable
 - To make the contract more formal
 - To make the contract longer
- When drafting a contract, what should you do if you are unsure about the legal language or requirements?

- a) Include the legal language you think is appropriate
- b) Consult with a lawyer or legal professional
- c) Ignore the legal requirements and write the contract as you see fit

PRACTICAL PART

I.Preparation

Before reading, study the following vocabulary:

sustainability
hygienic
amenities
facilities
corrugated
procurement
durability
accessibility
high-rise building
stipulated time

II. Reading Text

Types of buildings

Buildings can be categorised into three main types based on their usage: residential, commercial, and industrial. Each type of building serves a different purpose and has unique features.

1. Residential Buildings

Residential buildings are designed for people to live in. They can be single-family homes or residential apartments. The building in the image above is J Park by Aashish Group, and if you are looking for flats in Jaipur, then you should definitely check it out. These buildings are typically built with comfort and privacy in mind. They often feature amenities such as kitchens, bathrooms, and living areas. Residential buildings can be made of a variety of materials, including wood, brick, steel, and concrete. At Dhinwa Construction & Engineering, we specialise in constructing high-rise residential buildings, and our past projects are a testament to our expertise in the construction industry.

2. Commercial Buildings

Commercial buildings are designed for businesses to operate in. They can be office buildings, retail stores, or restaurants. These buildings are typically built with functionality and accessibility in mind. They often feature large open spaces, multiple floors, and parking areas. Commercial buildings can be made of a variety of materials, including steel, glass, and concrete. Over the years, we have worked on the construction of a number of commercial buildings, and thus, when it comes to building them, we are among the very few who can actually construct and deliver a commercial building within your budget and stipulated time.

3. Industrial Buildings

Industrial buildings are designed for manufacturing and production. They can be factories, warehouses, or distribution centres. These buildings are typically built

with durability and efficiency in mind. They often feature large open spaces, high ceilings, and loading docks. Industrial buildings can be made of a variety of materials, including steel, concrete, and corrugated metal. If you are looking for a construction contractor with expertise in building factories, you should definitely get in touch with our team of experts.

4. Educational Facilities

Educational facilities are buildings designed for teaching and learning. They can range from small schools to large universities. These buildings are equipped with classrooms, laboratories, libraries, and other facilities that are essential for education. Educational facilities are designed to provide a safe and conducive environment for learning. We provide our services for school building construction as well, so if you are interested, let's get in touch and see how we can help you create a sturdy and practical school building.

5. Healthcare Facilities

Healthcare facilities are buildings designed for the provision of healthcare services. They can range from small clinics to large hospitals. These buildings are equipped with examination rooms, operating rooms, laboratories, and other facilities that are essential for healthcare. Healthcare facilities are designed to provide a safe and hygienic environment for patients and healthcare providers. We are very well known as a respected hospital builder firm in the Jaipur region and beyond.

6. Green Buildings

Green buildings are designed to reduce the negative impact on the environment and promote sustainability. They are constructed using environmentally friendly materials and technologies that minimise energy consumption and waste production. Green buildings also incorporate features that improve indoor air quality, water efficiency, and overall occupant health and comfort.

7. Governmental Buildings

Government buildings are buildings designed for the provision of government services. They can range from small offices to large complexes. These buildings are equipped with offices, meeting rooms, and other facilities that are essential for government operations. Government buildings are designed to provide a secure and accessible environment for government officials and the public.

8. Hotel Buildings

As the name suggests, hotel buildings are those that provide safe housing for running a hotel. It can be anything from a low-rise to a high-rise building in terms of its size, with multiple floors, and a steel as well as glass structure at different levels. Overall, specialised buildings are designed to meet specific needs and requirements. They play an important role in society by providing essential services to the public.

After-text exercises

1. Do a comprehension quiz:

1. What is the primary purpose of residential buildings?

- a) to provide spaces for businesses to operate
 - b) to manufacture and produce goods
 - c) to provide living spaces for people
 - d) to promote sustainability
2. Which feature is commonly associated with commercial buildings?
- a) high ceilings and loading docks
 - b) kitchens and bathrooms
 - c) large open spaces and parking areas
 - d) classrooms and laboratories
3. What type of building is designed for manufacturing and production?
- a) green buildings
 - b) industrial buildings
 - c) governmental buildings
 - d) hotel buildings
4. What facilities are essential in educational buildings?
- a) high ceilings and open spaces
 - b) operating rooms and laboratories
 - c) classrooms, libraries, and laboratories
 - d) parking areas and offices
5. What is the main goal of green buildings?
- a) maximizing profits for businesses
 - b) reducing environmental impact and promoting sustainability
 - c) providing spaces for government operations
 - d) constructing large residential complexes
6. Healthcare facilities are equipped with which of the following?
- a) meeting rooms and offices
 - b) classrooms and libraries
 - c) examination rooms and operating rooms
 - d) high ceilings and large docks
7. Governmental buildings are designed to:
- a) reduce energy consumption and waste production
 - b) provide a secure and accessible environment for government operations
 - c) support large-scale manufacturing activities
 - d) offer accommodations for travellers
8. Hotel buildings are designed to:
- a) promote sustainability and environmental health
 - b) support education and research activities
 - c) provide accommodations for travellers with multiple floors and modern designs
 - d) house government officials and their offices
9. Which type of building is specifically designed to host hotels?
- a) residential buildings
 - b) commercial buildings
 - c) hotel buildings
 - d) industrial buildings

10. Which of the following materials is commonly used in constructing green buildings?

- a) corrugated metal and steel
- b) environmentally friendly materials
- c) brick and wood
- d) concrete and glass

2. Answer the questions:

1) What are the key differences between residential and industrial buildings in terms of purpose and design?

2) Why is sustainability an important consideration in the construction of green buildings, and how does it impact their materials and features?

3) What factors should be considered when designing educational facilities to ensure they provide a safe and effective learning environment?

4) How do the materials and structural requirements for healthcare facilities differ from those of commercial buildings?

5) In your opinion, what makes hotel buildings stand out in terms of architectural design and functionality compared to other building types?

3. True / false:

1) Industrial buildings are primarily designed for business operations and often include multiple floors and parking spaces.

2) Healthcare facilities must adhere to strict hygiene and safety requirements to ensure a safe environment for patients and staff.

3) Green buildings are constructed using environmentally friendly materials and technologies that promote energy efficiency.

4) Educational facilities typically feature amenities such as high ceilings and loading docks for efficiency.

5) Hotel buildings are designed to provide temporary accommodations and often include lobbies, restaurants, and multiple floors.

4. Watch a video

https://www.youtube.com/watch?v=sSk0s6S24Qg&ab_channel=BuildingStudies
es. Complete the table summarising information:

Type of building	Materials	Requirements	Purpose	Common features
Residential	Wood, brick, steel, concrete	Comfort, privacy, and compliance with local codes	Housing for individuals/families	Kitchens, bathrooms, and living areas
Commercial				
Industrial				
Educational				

5. Role play.

You are a construction project manager meeting with a team of subcontractors to finalise the project schedule for a new commercial building. Discuss each step of the schedule creation process. The PM facilitates by asking each role-specific question, ensuring all aspects (tasks, durations, resources, and reviews) are covered.

6. Writing. This template provides a structured approach to drafting a supply contract for innovative construction materials. You can adjust the terms based on your specific material, needs, and legal requirements.

Scenario:

You are a project manager in a construction or urban planning company. Your company has agreed to provide services to a client for a small project (e.g., building a community park, renovating a playground, or designing a mixed-use residential area). Your task is to **write a contract** between your company and the client.

CONTRACT AGREEMENT

This Contract is made on **[Date]** between: **[Company Name]**, with its principal office at **[Address]**, hereinafter referred to as “**the Contractor**”, and **[Client Name]**, residing at **[Address]**, hereinafter referred to as “**the Client**.”

1. Project Description

The Contractor agrees to provide the following services: **[Briefly describe the project, e.g., design and construction of a community park, renovation of a playground, or development of a mixed-use area.]**

2. Timeline

- Project commencement date: **[Start Date]**
- Project completion date: **[End Date]**
- Any delays must be communicated in writing by the responsible party.

3. Payment Terms

- Total project cost: **[Amount in currency]**
- Payment schedule: **[e.g., 50% upfront, 50% upon completion]**
- Payment method: **[Bank transfer, cash, check, etc.]**

4. Responsibilities

Contractor:

- Perform work according to specifications and standards
- Provide necessary materials and equipment
- Ensure safety and compliance with regulations

Client:

- Provide access to the site
- Supply necessary information and approvals
- Make payments as scheduled

5. Terms and Conditions

- Any changes to this contract must be agreed upon in writing by both parties
- The Contractor is not liable for delays caused by circumstances beyond their control
- This contract is governed by the laws of [**Country / City**]

6. Signatures

Contractor: _____

Date: _____

Client: _____

Date: _____

CHAPTER 4. SUSTAINABLE INFRASTRUCTURE MANAGEMENT

UNIT 11. SUSTAINABLE TRANSPORT SYSTEMS

THEORETICAL PART



Read and check your understanding.

CONFERENCE VOCABULARY

Conferences play a crucial role in facilitating knowledge exchange, collaboration, and innovation across various disciplines and industries. Whether academic, professional, or trade-focused, conferences offer valuable opportunities for learning, networking, and professional development, contributing to individual growth and collective advancement within the global community.

Benefits of Conferences:

Knowledge Exchange: Conferences provide opportunities to learn about the latest research, trends, and best practices within a particular field.

Networking: Attendees can connect with peers, experts, and potential collaborators, expanding their professional network and fostering partnerships.

Professional Development: Conferences offer workshops, seminars, and skill-building sessions to enhance participants' knowledge and expertise.

Visibility and Recognition: Presenting research or speaking at conferences can increase visibility and recognition within one's field of expertise.

Inspiration and Motivation: Engaging with like-minded individuals, hearing success stories, and learning about groundbreaking innovations can inspire and motivate attendees in their respective endeavours.

Conference Vocabulary:

Early Bird Registration: A discounted registration fee offered to attendees who register for the conference before a specified early bird deadline.

Late Registration: Registration for the conference after the early bird deadline is often subject to higher fees.

Registration Fee: The cost associated with attending the conference, covering access to sessions, materials, meals, and other conference amenities.

Student Rate: A reduced registration fee offered to students attending the conference, typically requiring proof of current enrollment.

Presenter: An individual who delivers a presentation, speech, or paper at the conference, sharing research findings, insights, or expertise on a specific topic.

Proceedings: A compilation of papers, abstracts, or presentations delivered at the conference, often published in print or digital format for distribution to attendees.

Poster Presentation: An alternative to oral presentations, where presenters display research findings or project summaries on posters for viewing and discussion by conference attendees.

Session Chair: An individual responsible for moderating a session, introducing speakers, managing time, and facilitating audience participation.

Conference App: A mobile application designed to provide attendees with access to conference schedules, session details, networking opportunities, and interactive features.

Awards Ceremony: A formal event held during the conference to recognise outstanding contributions, achievements, or research excellence in specific areas related to the conference theme.

Vendor Booth: A designated space within the exhibition hall where vendors, sponsors, or exhibitors showcase products, services, or solutions relevant to conference attendees.

Ballot: A voting form or paper used to cast votes or make selections, typically used in elections, awards, or decision-making processes during the conference.

Agenda: A detailed schedule or outline of sessions, presentations, activities, and events planned for the conference, including timings, topics, speakers, and locations.

Keynote Speaker: A distinguished speaker who delivers a keynote address at the opening or closing of a conference, setting the tone and providing insights on the main theme.

Panel Discussion: A session where a group of experts or panellists discuss a specific topic, often moderated by a facilitator.

Workshop: An interactive session where attendees engage in hands-on activities, discussions, or exercises to learn practical skills or explore specific topics in depth.

Breakout Session: Concurrent sessions held simultaneously during the conference, offering attendees the opportunity to choose from a variety of topics based on their interests.

Networking Event: A designated time or session for attendees to connect, share ideas, and build professional relationships.

Delegate: An individual attending the conference, often representing an organisation or institution.

Plenary Session: A session attended by all conference participants, typically featuring keynote speakers, presentations, or discussions on overarching themes or topics.

Abstract: A concise summary of a presentation, paper, or research topic submitted for consideration to be included in the conference program.

Facilitator: A person responsible for guiding discussions, managing sessions, and ensuring smooth communication and interaction among participants.

Feedback Form: A questionnaire or survey provided to attendees to gather feedback and evaluations on the conference content, organisation, and overall experience.

Live Polling: An interactive tool used during sessions to engage attendees by allowing them to respond to polls or surveys in real-time using mobile devices or audience response systems.

Closing Remarks: Concluding statements delivered by conference organisers or hosts, summarising key takeaways, expressing gratitude to participants, and providing information on future events or initiatives.

Here are some phrases commonly used in conferences:

Opening Remarks:

"I'm delighted to see such a diverse and engaged audience here today."

"Thank you all for joining us. Let's get started with our first session."

Introduction of Speakers:

"Our first speaker is [Name], who will be sharing insights on [Topic]."

"Next, we have [Name], an expert in [Field], who will be discussing..."

"Please join me in welcoming [Name] to the stage."

Transitioning Between Sessions:

"Now that we've heard from [Speaker Name], let's move on to our next topic."

"Before we proceed, does anyone have any questions for our current speaker?"

"Our next session will focus on [Topic], led by [Speaker Name]."

Encouraging Audience Participation:

"We value your input and encourage you to share your thoughts and questions."

"Don't hesitate to raise your hand if you have any comments or insights to contribute."

"Let's make this session interactive. I invite you all to join the discussion."

Moderating Discussions:

"Thank you for those insightful questions. Let's address them one by one."

"I'd like to hear from some of our quieter attendees. What are your thoughts on this topic?"

"Let's keep the conversation focused and respectful as we explore different perspectives."

Closing Remarks:

"As we wrap up [Conference Name], I want to express my gratitude to our speakers, sponsors, and attendees."

"I hope you found today's discussions valuable and inspiring. Safe travels, and see you next time."

"Thank you all for your participation. Let's continue the conversation online and stay connected."

SELF-ASSESSMENT

1. What is the primary purpose of an academic conference?
 - a) networking with industry professionals
 - b) showcasing innovative products
 - c) sharing research findings and scholarly work
 - d) organising entertainment events
2. What type of session at a conference involves a group of experts discussing diverse perspectives on a specific topic?
 - a) keynote speech
 - b) workshop
 - c) panel discussion
 - d) poster presentation

3. Which of the following is a common feature of trade shows or expos within a conference?
- a) hands-on activities
 - b) research presentations
 - c) showcasing products and innovations
 - d) interactive debates
4. What is the purpose of a networking event at a conference?
- a) showcasing keynote speakers
 - b) demonstrating new technologies
 - c) connecting attendees and building professional relationships
 - d) presenting awards and recognitions
5. What are some benefits of attending conferences?
- a) decreased visibility and recognition
 - b) limited opportunities for networking
 - c) enhanced learning and professional development
 - d) decreased motivation and inspiration

PRACTICAL PART

I.Preparation

Before reading, study the following vocabulary:

decarbonizing
electrified
subsidies
externalities
inclusive
resilience / resilient
adaptive capacity
Sustainable Urban Mobility Plans (SUMP)
circular economy

II. Reading a text

Sustainable transport system

The transport sector is responsible for 13.7 per cent of global greenhouse gas emissions, making its transformation urgent for tackling climate change and meeting the goals of the Paris Agreement.

When it comes to personal vehicles, this transformation has started accelerating in recent years. Electric cars represented more than 20 per cent of all cars sold in 2024, with this figure expected to reach 25 per cent – 20 million vehicles – in 2025. Public charging stations have also doubled in the past 2 years in response to this growth. When coupled with advancements in renewable energy, these developments can help cut down emissions from the transport sector.

At the same time, decarbonising the transport sector also addresses several public health crises. Air pollution contributes to 6.7 million premature deaths annually, mostly in low- and middle- income countries, while noise pollution

adversely impacts the well-being and quality of life of urban residents. In addition, road traffic injuries claim approximately 1.19 million lives each year, and are the leading cause of death for children and young adults aged 5–29 years. Redesigning transport systems to be cleaner, safer and more inclusive is therefore a critical step not only for climate action, but for protecting human life and public health at scale.

Sustainable transport also makes countries more economically resilient. In a world increasingly shaped by volatile energy prices and inflationary pressure, clean transport systems offer greater long-term stability. Electrified public transport, shared mobility services, and efficient logistics across land, water, and air are becoming increasingly cost-effective, with costs continuing to fall as technologies advance and markets mature. Moreover, well-planned networks improve access to jobs, healthcare and education, particularly for women, youth, people with disabilities and underserved communities, while also lowering operating costs. Although upfront investments can be high, electrified and efficient transport systems reduce energy use, cut traffic-related expenses, create new jobs and generate public health savings. Therefore, these investments have the potential to pay for themselves in the medium term.

One way to generate additional investments in sustainable transport is by redirecting fossil fuel subsidies. Estimates indicate that fossil fuel subsidies, both explicit (direct public spending) and implicit (externalities like the effects of climate change or premature deaths caused by air pollution), reached US\$7 trillion in 2022. Redirecting even a portion of direct fossil fuel subsidies, alongside efforts to internalise external costs through smart pricing and regulation, could help unlock funding for sustainable transport solutions that deliver long-term economic, environmental and social returns. In addition, by lowering dependence on imported oil – which still supplies nearly half of global transport fuel – countries can reduce exposure to fuel price volatility and supply disruptions. This is particularly relevant for Small Island Developing States (SIDS), where imported oil can account for over 75 per cent of transport fuel use, making sustainable transport a key driver of energy resilience. This enhances energy security and provides a more stable foundation for long-term investment.

At the same time, sustainable transport improves access to mobility for underserved communities and supports inclusive urban development. It also fosters more resilient cities. This is particularly important as climate change is placing increasing pressure on transport infrastructure. Flooding, heatwaves, sea-level rise and extreme weather events are damaging roads, railways, ports and airports – disrupting mobility, supply chains and public services. Building adaptive capacity through climate-resilient planning, infrastructure design, and early warning systems is essential to protect investments, safeguard access and ensure continuity of service in the face of growing climate risks.

How 3D Printing Is Used in Construction

Which policy tools are countries using to advance sustainable transport?

Countries around the world are increasingly integrating transport into their Nationally Determined Contributions (NDCs) and Long-Term Low Emission Development Strategies (LT-LEDS) as they work to meet the goals of the Paris Agreement. These commitments reflect a growing recognition that decarbonising

transport is essential to reducing emissions and achieving broader development goals.

National plans and strategies typically include a combination of measures, such as:

- Electrifying public and private vehicle fleets;

- Investing in mass transit systems, including electric buses and charging infrastructure;

- Expanding walking and cycling networks;

- Adopting biofuels and clean energy for freight, aviation and maritime transport;

- Developing comprehensive transport master plans and Sustainable Urban Mobility Plans (SUMP);

- Carrying out feasibility and market opportunity studies to support sustainable transport transitions;

- Introducing incentives for electric two- and three-wheelers and off-peak charging;

- Supporting battery reuse, recycling and circular economy measures;

- Structuring blended finance solutions to de-risk private investment in clean transport.

Establishing safeguards to limit the environmental and social impacts of critical mineral extraction.

In many cases, countries are also embedding transport decarbonization efforts into broader energy, transport and infrastructure sector plans to ensure coherence across policies, technologies, and financing mechanisms, strengthening alignment across the sustainable transport value chain.



From: <https://climatepromise.undp.org/news-and-stories/what-sustainable-transport-and-what-role-does-it-play-tackling-climate-change>

✍ After-text exercises

Do a comprehension quiz:

1. What percentage of global greenhouse gas emissions is the transport sector responsible for?
 - A) 5%
 - B) 13.7%
 - C) 25%
 - D) 50%
2. What proportion of cars sold in 2024 were electric?
 - A) 10%
 - B) 15%
 - C) 20%
 - D) 30%
3. How many premature deaths annually are attributed to air pollution?
 - A) 1.19 million
 - B) 2 million
 - C) 6.7 million
 - D) 10 million
4. What is the leading cause of death for children and young adults aged 5–29?
 - A) Air pollution
 - B) Road traffic injuries
 - C) Climate change
 - D) Noise pollution
5. Which of the following is a benefit of sustainable transport?
 - A) Increased energy use
 - B) Reduced traffic-related expenses
 - C) Higher dependence on imported oil
 - D) Greater noise pollution
6. How much did fossil fuel subsidies reach in 2022?
 - A) US\$1 trillion
 - B) US\$3 trillion
 - C) US\$5 trillion
 - D) US\$7 trillion
7. What are Nationally Determined Contributions (NDCs) used for?
 - A) Increasing fossil fuel use
 - B) Meeting Paris Agreement climate goals
 - C) Promoting car ownership
 - D) Expanding highways only
8. Which policy measure is used to reduce emissions in freight, aviation, and maritime transport?
 - A) Electrifying cars only
 - B) Expanding road lanes

- C) Using biofuels and clean energy
 - D) Increasing fossil fuel subsidies
9. What does “adaptive capacity” refer to in transport planning?
- A) Ability to drive faster
 - B) Ability to respond to climate change and extreme events
 - C) Building more roads
 - D) Increasing car ownership
10. What is one example of circular economy measures in transport?
- A) Building more highways
 - B) Battery reuse and recycling
 - C) Increasing vehicle imports
 - D) Expanding parking lots

1. Answer the questions:

1. Why is transforming the transport sector considered urgent for climate action?
2. How have electric cars impacted greenhouse gas emissions recently?
3. What are the public health benefits of decarbonising transport?
4. How does sustainable transport improve economic resilience?
5. Why is redirecting fossil fuel subsidies important for funding clean transport?
6. What role do Nationally Determined Contributions (NDCs) play in sustainable transport?
7. How can adaptive capacity help cities cope with climate change impacts on transport infrastructure?

2. True / false:

1. The transport sector is responsible for over 20% of global greenhouse gas emissions.
2. Electric cars accounted for more than 20% of all car sales in 2024.
3. Noise pollution has no significant impact on urban residents’ well-being.
4. Sustainable transport can reduce dependence on imported oil and stabilise energy prices.
5. Fossil fuel subsidies reached approximately US\$7 trillion in 2022.
6. Nationally Determined Contributions (NDCs) are unrelated to the Paris Agreement.
7. Adaptive capacity in transport planning helps cities remain resilient to extreme weather events.

4. Match the words with their definitions:

Words:

decarbonizing
electrified
subsidies
externalities

inclusive
resilience
mobility
circular economy

Definitions:

- A. Financial support provided by the government to encourage or support activities
- B. Designed to include all people, regardless of background or ability
- C. An economic system focused on reusing, recycling, and reducing waste
- D. Reducing or eliminating carbon dioxide emissions from an activity or sector
- E. The ability to recover quickly from difficulties or adapt to changes
- F. Powered by electricity instead of fossil fuels
- G. The ability to move freely and efficiently
- H. Unintended side effects of an activity, often affecting third parties

5. Watch the video “Sustainable transport development in Asia”

<https://www.youtube.com/watch?v=Paw20YcZgwk>

Write down the principles and objectives of sustainable transport development in Asia.

6. Role play. Watch the video Dubai's Green Mobility: Revolutionising Transport with Clean Energy

<https://www.youtube.com/watch?v=vqHu78K89xE>. Make up a dialogue with your partner based on the video about transport in Dubai. You may also include additional information you find.

Unit 12. WATER AND SANITATION SYSTEMS



THEORETICAL PART ACADEMIC WRITING

Scientific writing follows a specific style convention. Its goal is to convey quantitative information about research as efficiently as possible, resulting in writing that is easy to scan. Writing styles used in disciplines like history or literature are not useful when writing scientifically because they do not lend themselves to efficiently presenting research findings. Below are some guidelines for scientific writing:

1. Sentences and paragraphs. Aim for brevity.

Use simple sentences to convey complex information. Longer sentences are harder to understand and to remember. They also often lead to grammatical errors. Aim for one idea per sentence. Keep paragraphs short. As with sentences, keep to one idea per paragraph.

2. Correct verb tense

- Use the present tense for generalisations and stable conditions. For example, to describe a theory that is currently held: "Theory of mind refers to..."

- Use past tense when referring to previous research, methods, and results, because these have occurred in the past: "Sudley (1969) showed...", "We found..."

In general, these are the verb tenses typically used in each section of a research paper:

Abstract:

- Present tense for theory and conclusions
- Past tense for experimental results

Introduction:

- Present tense for theory
- Past tense for specific methods and findings of previous research
- Future tense for hypotheses

Method, Results: Past tense

Discussion:

- Past tense for results of the current study ("we found")
- Present tense for relating results to other findings or theories ("our results are consistent with", "the theory of natural selection predicts that...")

3. Passive versus active voice. Active voice is usually clearer. For example, "Birds build nests" is clearer than "Nests are built by birds," and "I found" is clearer than "It was discovered." Use passive voice if it is clearer.

4. Correct word use. Be precise: make every word mean what you want it to mean. The following words are commonly misused in scientific writing.

Significant. Use in a statistical context only. The opposite of significant is "nonsignificant" (not "insignificant"). Significance refers to differences, not results.

Yes: The differences between the control and experimental groups were nonsignificant.

No: The differences were insignificant.

The results were nonsignificant.

This theory has significant implications for women as well as men.

Which vs. That

“That” precedes information that is necessary to understand the rest of the sentence (e.g. Fiske and Glick argued that benevolent and hostile sexism arise from the biological and social conditions that many societies share).

“Which” precedes information that is not necessary to understand the rest of the sentence (e.g. the social dominance orientation scale, which had good reliability, predicted 80% of the variance in racial attitudes).

As a general rule, if changing "which" to "that" does not alter the meaning, then "that" is probably correct.

Because vs. Since.

“Because” refers to the cause or reason for an outcome. “Since” refers to the passage of time.

“Because”: e.g. *Because there were no outliers in the data, we analysed results from all participants.*

4. Needless words. Make every word mean something. Eliminate unnecessary words. Avoid adverbs, such as "very," "quite," "rather," and "somewhat." These words are not quantitative and do not add helpful information.

5. Abbreviations: Do not use abbreviations in the text except for units of measure. Always abbreviate these when using them with data (2 mm; 10 min.). Except for temperature units (F, C, K), never abbreviate units of measure when using them in a non-data context (e.g., "we measured length in millimetres"; "time was recorded in minutes"; "temperature was measured in F (or C)"; "100 years have passed since Mendel did...").

From: Style Points for Scientific Writing

https://psych.uw.edu/storage/writing_center/stylepoints.pdf

Elements of Style for Writing Scientific Journal Articles

https://www.gfdl.noaa.gov/wp-content/uploads/2018/08/Elements_of_Style.pdf

SELF-ASSESSMENT

1. Which of the following is the best principle for sentence structure in scientific writing?

- A. Use long, complex sentences to show depth of knowledge
- B. Combine several ideas in one sentence to save space
- C. Use short sentences, one idea per sentence
- D. Use literary style for more engaging results

2. Which verb tense is typically used to describe methods and results of a study?

- A. Present
- B. Past
- C. Future
- D. Present perfect

3. In the Discussion section, which tense is used to compare results with theory?

- A. Past tense
 - B. Present tense
 - C. Future tense
 - D. Either present or past tense, depending on author preference
4. Which version is clearer according to scientific writing guidelines?
- A. "It was discovered that birds build nests."
 - B. "Birds build nests."
 - C. "Nests are built by birds."
 - D. "The fact that nests are built by birds was discovered."
5. In scientific writing, the word significant should be used to refer to:
- A. Importance of a result
 - B. Statistical difference
 - C. Theoretical implications
 - D. Unexpected findings
6. Which of the following best demonstrates correct use of because?
- A. "Since the data were accurate, we rejected no participants."
 - B. "Because the data were accurate, we rejected no participants."
 - C. "We rejected no participants, since the data were accurate."
 - D. "We rejected no participants, because time was limited."
7. Which of the following is an example of needless words?
- A. "The results were very significant."
 - B. "The results were statistically significant."
 - C. "The results were nonsignificant."
 - D. "The differences were nonsignificant."
9. Which abbreviation rule is correct in scientific writing?
- A. Always abbreviate time as "min" even in a non-data context.
 - B. Abbreviate only when paired with data values (e.g., 10 mm).
 - C. Abbreviate any unit regardless of context.
 - D. Never abbreviate temperature units.
10. Which of the following is the best guideline for paragraph structure?
- A. Write one idea per paragraph, keep them short
 - B. Combine several ideas per paragraph for complexity
 - C. Paragraphs should be at least half a page
 - D. Use storytelling techniques to hold interest

PRACTICAL PART

I.Preparation

Before reading, study the following vocabulary:

Augmented Reality (AR)

interoperability

Blockchain

Digital Twin

Laser Scanner

4D simulation

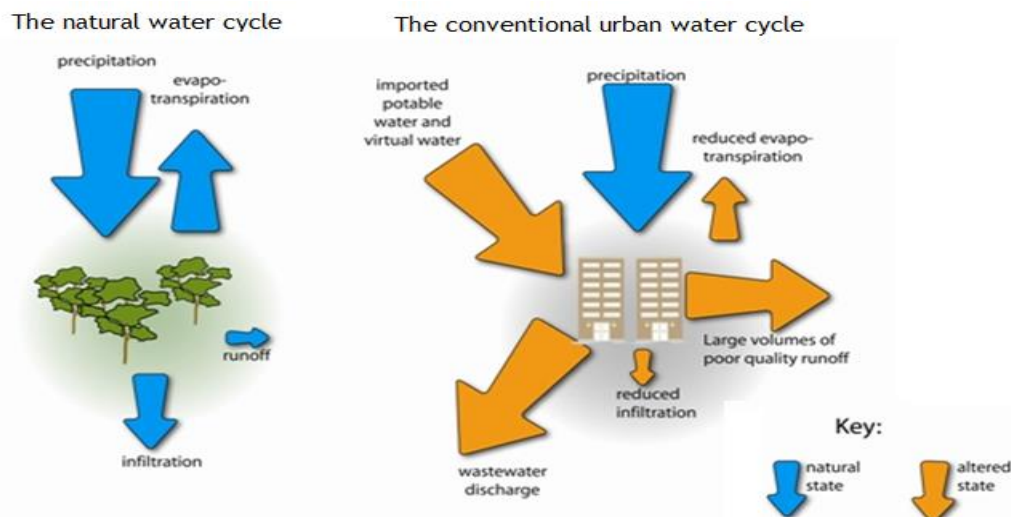
procurement

II. Reading Text

Water, Sanitation and Urbanisation

Conventional urban water supply and sanitation management is generally characterised by an unsustainable use of water and nutrients. This represents important environmental, economic and social challenges, which are intensified by the process of urbanisation.

Major differences between the natural water cycle and the conventional urban water cycle:



Disruption of the natural water cycle: The conventional urban water cycle is characterised by a linear infrastructure that transports clean water into and wastewater out of urban neighbourhoods. Due to a high percentage of sealed soil and thus impervious surfaces, evapotranspiration and groundwater recharge are reduced, and low-quality surface runoff is increased – utilities are often left to deal with extremely large volumes of water, especially during wet weather (CORCORAN et al. 2010). Climate change will further intensify these challenges in many regions as it will lead to more erratic patterns of droughts and storms.

Pollution of water sources: Urban settlements are the main source of point source pollution (UNESCO et al. 2004). It is estimated that more than 90% of sewage in the developing world is discharged directly into rivers, lakes, and coastal waters without treatment of any kind (LUETHI et al. 2009). In low- and middle-income countries, leaking on-site sanitation facilities together with the absence of sewerage pipes that dispose the wastewater, result in large volumes of local

wastewater soaking into the soil, and eventually seeping into aquifers and polluting groundwater (GROENWALL et al. 2010).

Depletion of groundwater sources: In urban settings, the use of shallow groundwater sources is an especially common feature of many low-income communities in low- and middle-income countries. More than half of the world's megacities depend on groundwater (see also sources of groundwater).

Broken nutrient cycles and impoverished soils: The “end-of-pipe” paradigm discourages recovery and reuse so that nutrients are lost to water bodies. This waste of valuable resources can lead to eutrophication and cause algal blooms and a depletion of oxygen in receiving water bodies (HOWE et al. 2011, see also sanitation systems). In Africa, 85% of arable land is losing an average of 30kg of nutrients per hectare per year (LUETHI et al. 2009).

Waste of resources: Water treated to potable water is used for non-potable purposes such as toilet flushing, garden use and industry. When water is heavily priced or charged based on a fixed rate, users have little financial incentive to use it sparingly (HOWE et al. 2011).

High water demand: The concentration of a great quantity of population and activities on a small area involves the need for a great amount of good quality water (CHOCAT 2002). Urban areas usually have a higher per capita consumption of water compared to rural areas. Water demand is additionally increased as the urban population grows, and per capita water consumption in many cities is on the rise (see also water use).

Cost-intensive infrastructure for water supply and wastewater collection: The increase in urban population asks for a continuous expansion of water networks and wastewater networks (see also wastewater collection and treatment). Centralised networks are very cost-intensive in terms of construction, operation and maintenance. If the networks are not sufficiently maintained, leakages lead to a loss of valuable resources, unreliable or irregular water supply and low revenue collection for the utilities (see also leakage control). Many large cities suffer from chronic water shortages due to over-exploitation of raw water resources, and to losses of water, which sometimes reach up to 60% of the volume of water supplied (UNESCO et al. 2004).

Sanitation and sustainable urban development

In view of urban growth rates in Africa (3-5 %) and Asia (≈ 3 %), two continents where the lack of sanitation is the most striking, the issue of urban sanitation is crucial. Not only is it a “time bomb” for health in the dense, congested cities, but the cost of inaction is also growing exponentially. The sense of urgency is compounded by the fact that the benefits provided by improving access to sanitation can have repercussions on all dimensions of sustainable urban development.

On a social level, the control of epidemics and public health has quickly improved. On the individual level, access to toilets immediately improves living conditions: comfort, hygiene and human dignity are all increased, more specifically for women who have better privacy and safety. Furthermore, actions in this sector

help to improve working conditions, which are often unhealthy or even dangerous for sanitation operators, who are typically precarious, informal workers.

According to the World Health Organisation (WHO), the cost of poor sanitation amounts to 7% of GDP in low-income countries, due to the decline in worker productivity and the lower economic appeal of cities with inadequate sanitation. On the contrary, the WHO estimates that the return on sanitation spending is 5.5 US dollars for every 1 dollar invested. In other words, while the benefits of sanitation may sometimes seem intangible, they are in fact very real.

Better urban sanitation unquestionably contributes to environmental protection, through a reduction in pollution of soils, waterways and groundwater. It also helps to mitigate the adverse impacts of flooding exacerbated by climate change.

Finally, in developing cities, sanitation is a fundamentally urban challenge. Public health is directly impacted by the quality of sanitation. Interactions with the urban environment and other services also make it a key sector: interdependencies with the solid waste, water, and even agricultural sectors in the context of the circular economy through wastewater reuse.

From: <https://sswm.info/es/node/7722>

<https://www.iddri.org/en/publications-and-events/blog-post/sanitation-developing-cities-imperative-sustainable-urban>

After-text exercises

1. Do a comprehension quiz:

1. What is the main characteristic of the conventional urban water cycle?
 - a) Circular reuse of resources
 - b) Linear infrastructure that transports clean water in and wastewater out
 - c) Full recycling of wastewater
 - d) Decentralised community-based treatment
2. What effect do sealed soils and impervious surfaces have in urban areas?
 - a) They increase evapotranspiration
 - b) They reduce groundwater recharge and increase surface runoff
 - c) They improve soil fertility
 - d) They prevent flooding completely
3. According to the text, what will climate change do to urban water challenges?
 - a) Solve them through natural regulation
 - b) Intensify them by creating more droughts and storms
 - c) Reduce water demand in cities
 - d) Make infrastructure cheaper
4. What percentage of sewage in the developing world is discharged untreated?
 - a) 30%
 - b) 50%
 - c) 70%
 - d) More than 90%
5. What is a consequence of leaking on-site sanitation facilities in low-income countries?

- a) Increased groundwater recharge
 - b) Wastewater seeps into aquifers and pollutes groundwater
 - c) Reduced urban flooding
 - d) Stronger sewerage networks
6. More than half of the world's megacities depend on which water source?
- a) Rainwater harvesting
 - b) Seawater desalination
 - c) Groundwater
 - d) Surface reservoirs
7. What environmental problem is linked to broken nutrient cycles?
- a) Desertification
 - b) Eutrophication and algal blooms
 - c) Acid rain
 - d) Ozone depletion
8. Why do many cities face chronic water shortages?
- a) Too much rainfall
 - b) Over-exploitation of raw water and leakages in networks
 - c) Decreased urban population
 - d) Abundance of alternative water sources
9. What is the estimated return on sanitation spending according to WHO?
- a) \$1.5 for every \$1 invested
 - b) \$3 for every \$1 invested
 - c) \$5.5 for every \$1 invested
 - d) \$10 for every \$1 invested
10. On a social level, what immediate improvement does access to toilets bring?
- a) Increased housing prices
 - b) Comfort, hygiene, and dignity
 - c) Higher water bills
 - d) Reduced biodiversity

2. Answer the questions:

- 1) How does urbanisation disrupt the natural water cycle, and what are the consequences for groundwater recharge?
- 2) Why is untreated sewage a major problem in developing countries, and how does it affect local water sources?
- 3) Explain the environmental impact of broken nutrient cycles in urban water systems.
- 4) What are the social benefits of improving access to sanitation in densely populated cities?
- 5) How does poor urban sanitation affect a country's economy, according to the World Health Organisation?
- 6) Discuss the interconnections between urban sanitation, solid waste management, and the circular economy.

3. True / false:

- 1) The conventional urban water cycle is circular, recycling all wastewater.
- 2) Sealed soils in cities reduce groundwater recharge and increase surface runoff.
- 3) More than 90% of sewage in developing countries is treated before being discharged.
- 4) Broken nutrient cycles can lead to eutrophication and oxygen depletion in water bodies.
- 5) Improving access to sanitation has no measurable economic benefits.
- 6) Public health in urban areas is directly affected by the quality of sanitation.

4. Match the words with their definitions:

Words:

evapotranspiration
groundwater recharge
eutrophication
sanitation
infrastructure
megacity

Definitions:

- a) The process of water infiltrating into underground aquifers.
- b) The removal and treatment of human waste and wastewater to protect public health.
- c) The concentration of a very large population in an urban area, typically over 10 million inhabitants.
- d) The release of excess nutrients into water bodies, causing algal blooms and oxygen depletion.
- e) The combined process of water evaporation from soil and transpiration from plants.
- f) Basic physical systems and structures, such as water supply, sewage networks, and roads, that support a city.

4. Speaking. Present your ideas and recommendations on: what strategies could cities use to reduce water waste and increase efficiency? Consider technological, social, and policy measures.

6. Writing. Read the passage below about urban development. Rewrite it in correct scientific style.

Nowadays, cities are growing very, very quickly, which is quite a big problem since many people are moving there. The planners are trying to create sustainable transport systems, which is a thing that is important for the future. In the last decade, researchers show that car traffic has increased a lot. Because people need jobs, they are moving to the city, and it was discovered that the housing demand is extremely significant. This means that green areas are reduced, which is rather bad for the environment.

Another quite big problem is waste management, which is something that has been ignored sometimes. Since there are a lot of people, the amount of waste is very high, and the authorities are rather slow in solving it. Researchers in 2015 showed that waste recycling was insignificant in many cities, which is very bad. The government should really try harder to implement sustainable strategies that will maybe help in the future.

UNIT 13. SUSTAINABLE INFRASTRUCTURE

THEORETICAL PART



How to build a preliminary zoning analysis: template to follow

<https://tectmind.com/blog/f/how-to-build-a-preliminary-zoning-analysis-template-to-follow>

Understanding the zoning regulations and development potential of a property is crucial for real estate development and acquisition. A preliminary zoning analysis helps identify what can and cannot be done with a piece of land, guiding informed decisions. Here's a comprehensive step-by-step guide to building a preliminary zoning analysis.

Step 1: Gather Basic Property Information

- **Property Address:** Obtain the full address or parcel number.
- **Property Size:** Determine the size in square feet or acres.
- **Current Use:** Identify how the property is currently being used (e.g., residential, commercial, industrial).

Step 2: Identify the Zoning District

- **Zoning Map:** Get the zoning map from the local municipality or planning department. Consult the NYC Planning Zoning Map to determine the zoning district. The parcel is located in an R7A zoning district.

- **Zoning Code:** Access the detailed zoning code or ordinance for your zoning district. Access the NYC Zoning Resolution for details on R7A regulations.

Step 3: Review Zoning Regulations

- **Permitted Uses:** List all uses permitted in the zoning district.
For example: Residential buildings, community facilities (e.g., schools, libraries)

- **Conditional Uses:** Identify uses that need additional approvals.

For example: Medical offices with limitations

- **Prohibited Uses:** Note the uses that are not allowed. For example:

Look for any incentives available for that parcel. For example, if the parcel is in a voluntary inclusionary district, you can qualify for more FAR if you offer non-market dwelling units. Learn more about incentive bonuses.

Step 4: Analyse Development Standards

- **Setbacks:** Check required distances from property lines (front, side, and rear). For example: Front yard minimum depth of 10 feet, no side yard required if adjacent to another building

- **Height Limits:** Determine the maximum building height. For example: Maximum building height of 80 feet. Learn more about how Height Limits are found in the Zoning Resolution.

- **Floor Area Ratio (FAR):** Calculate the total building area allowed relative to the lot size. For example: Maximum FAR of 4.0, allowing up to 40,000 square feet of Zoning Floor Area (ZFA). Learn how to find FAR and calculate Zoning Floor Area.

- **Lot Coverage:** Identify the maximum percentage of the lot that can be built upon. For example: Maximum lot coverage of 65%. Learn how to calculate Lot Coverage.

- **Maximum Dwelling Units:** Look for the Dwelling Unit Factor (DUF), which is a number assigned by the NYC Zoning Resolution, representing the average floor area per dwelling unit. Different districts have different DUFs. Divide the Maximum Residential Floor Area by the DUF: This gives the maximum number of dwelling units.

- **Parking Requirements:** Identify the minimum off-street parking requirements per dwelling unit.

Step 5: Check Overlay Districts and Special Regulations

Overlay zones and special districts might impose extra regulations:

- **Overlay Zones:** See if the property is in an overlay zone (e.g., historic, environmental). An example can be that the parcel is within the Special Harlem River Waterfront District, which imposes additional design and use regulations.

- **Special Districts:** Check for any special planning districts affecting development. For example: Review specific requirements for the Harlem River Waterfront District, such as waterfront public access.

You can find overlay and special districts using the NYC ZoLa Land Use Map. Learn how.

Step 6: Research Recent Zoning Changes and Plans

Stay updated with recent changes:

- **Zoning Amendments:** Review recent amendments that might impact the property.

- **Comprehensive Plan:** Examine future land use and development goals from the municipality's comprehensive plan.

- **Neighbourhood Plans:** Look for specific plans or studies relevant to the property's area.

Step 7: Review Additional Restrictions and Requirements

Understand all requirements:

- **Parking Requirements:** Identify minimum parking requirements. For example: One off-street parking space required per dwelling unit, with some exemptions. Here's how to do that.

- **Open Space Requirements:** Determine any open space or landscaping requirements. For example: A Minimum of 20% of the lot must be landscaped open space.

- **Design Guidelines:** Check for any mandatory design guidelines or architectural standards. For example: Follow design guidelines specified for the Harlem River Waterfront District, focusing on aesthetics and public access.

Step 8: Assess Potential Development Scenarios

Consider different development options:

- **Feasibility Analysis:** Evaluate the feasibility of various development scenarios. For example, consider developing a mid-rise residential building with ground-floor retail. Calculate costs and potential revenue. Click here for a sample development feasibility report.

- Highest and Best Use: Determine the highest and best use of the property under current zoning. For example: Determine that a mixed-use development (residential with ground-floor retail) maximises the property's value under current zoning.

Step 9: Summarise Findings

Compile all information into a comprehensive report:

- Zoning Report: Summarise your analysis findings.
- Maps and Diagrams: Include visual aids to illustrate zoning regulations and development scenarios.

By following these steps, you can develop a comprehensive preliminary zoning analysis that will help in making informed decisions regarding property development and acquisition. If you're in a rush and want to build a preliminary zoning analysis in seconds, you should consider automated preliminary zoning analysis platforms like Tectmind. Search an address, apply available incentives and download a custom zoning report in a matter of seconds.

Read and check your understanding.

1. What is the main purpose of a preliminary zoning analysis?
 - A) To determine property taxes
 - B) To identify what can and cannot be done with a property
 - C) To hire construction contractors
 - D) To sell the property quickly
2. Which of the following is considered basic property information?
 - A) Zoning incentives
 - B) Property address and size
 - C) Floor Area Ratio
 - D) Maximum dwelling units
3. What is the first step to determine a property's zoning district?
 - A) Calculate FAR
 - B) Check the zoning map
 - C) Evaluate parking requirements
 - D) Assess development feasibility
4. Which of these is NOT a type of use identified in zoning regulations?
 - A) Permitted uses
 - B) Conditional uses
 - C) Prohibited uses
 - D) Recommended uses
5. What does FAR (Floor Area Ratio) represent?
 - A) Maximum building height
 - B) Total building area allowed relative to lot size
 - C) Required setback distance
 - D) Minimum parking spaces
6. Which of the following might impose extra regulations on a property?
 - A) Zoning maps

- B) Overlay districts and special districts
 - C) Lot size
 - D) Property deed
7. How can you find recent zoning changes affecting a property?
- A) By checking the property's tax bill
 - B) By reviewing zoning amendments and municipal plans
 - C) By measuring lot coverage
 - D) By contacting construction companies
8. What is the purpose of a feasibility analysis in zoning studies?
- A) To design the building façade
 - B) To evaluate the viability of different development scenarios
 - C) To enforce zoning violations
 - D) To calculate property taxes
9. What is considered when determining the “highest and best use” of a property?
- A) The current weather conditions
 - B) The property's value under current zoning
 - C) The property owner's personal preference only
 - D) Local construction material costs
10. Which of the following should be included in a zoning report?
- A) Maps and diagrams illustrating zoning regulations
 - B) Only the property price
 - C) Names of contractors
 - D) Historical population data

PRACTICAL PART

I. Preparation

Before reading, study the following vocabulary:

sustainable infrastructure
climate-resilient
Triple Bottom Line
hard infrastructure
soft infrastructure
net present value
return on investment
biodiversity
social inclusion
governance

II. Reading Text

What Is Sustainable Infrastructure?



Sustainable infrastructure is an infrastructure providing economic, social, and environmental advantages in the long term. Sustainable infrastructure is important to achieve global climate targets and the Sustainable Development Goals (SDGs). Moreover, this effort also grows the global economy.

As the global population grows, this can disrupt the economic, social, and environmental balance because infrastructure must be designed appropriately to provide everyone with equal opportunities and facilities.

It is not uncommon for some areas of the world to have areas that are chaotically designed, use too much energy, and even lack adequate public transportation facilities. Thus, sustainable infrastructure is here with more integrated, climate change-resilient, and sustainable urban area solutions.

The concept of sustainable infrastructure is designed to fulfil the population's needs, such as power plants, roads, bridges, and others, adhering to sustainable principles. As a result, the infrastructure must be entirely environmentally friendly and include governance, economic, and social factors.

Dimensions of Sustainable Infrastructure

1. Environment

Sustainable infrastructure reduces the environmental impact and supports natural resources conservation. This also includes the efforts to decrease greenhouse gas emissions, manage waste wisely, implement water and energy efficiency, and conserve biodiversity.

Regarding this dimension, Chandra Asri Group, as the leading energy, chemical, and infrastructure solution company in Southeast Asia, commits to environmental responsibility in every operational network.

Some of the actions are lowering harmful emissions, preventing air pollution, monitoring emission levels, managing resources efficiently, reducing wastewater, minimizing operational waste, and protecting biodiversity.

2. Social

Sustainable infrastructure supports inclusion and social equality, meaning that everyone must be able to access the basic infrastructure and services they need.

Some efforts are to consider community input in planning and decision-making for sustainable infrastructure development, ensure accessibility for people with disabilities, create local jobs, and improve the quality of life in the surrounding communities.

The Chandra Asri group also emphasizes the participation values and community's involvement as well as collects inputs from the community. This action aims to ensure that the company's social responsibility programs stay relevant.

We target education, health, the economy, the environment, and social sectors and make sure that the community can get the optimal services and facilities.

3. Economy

Sustainable infrastructure must contribute to sustainable economic building and be proper in terms of finances in the long term. The actions can support the efficient use of financial resources, maximize return on investment (ROI) over the infrastructure lifecycle, and encourage job creation and technological innovation.

Chandra Asri Group also contributes to supporting the local economy with skill development to create proper and diverse jobs. We also develop businesses through partnership programs so that communities can benefit economically.

4. Governance

Sustainable infrastructure must support the sustainability of infrastructure management and development. This is certainly supported by a strong governance framework, accountability, and transparency.

The triple bottom line (TBL) emphasises three aspects, which are people, profit, and planet. According to "Sustainable Infrastructure: An Overview, Placing Infrastructure in the Context of Sustainable Development," here is the concept of sustainable infrastructure in terms of the triple bottom line:

1. Profit

In general, sustainable infrastructure is not only about financial resources but also about economy and cost advantages, in which this structure must contribute to gross domestic product (GDP), creating job openings and opening access to the market.

This book also notes that to be sustainable, an infrastructure project must have a positive net present value (NPV) and an economic rate of return that is greater than the minimum value determined by the government.

2. People

Sustainable infrastructure must include hard and soft components. Hard infrastructure is physical assets supporting social service development, such as hospitals and schools.

On the other hand, soft infrastructure is an asset that enables the public to get their social rights and encourages public service governance.

Sustainable infrastructure should include both hard and soft infrastructure, contribute to the development of the local area, and be able to mitigate any social impacts of the project, such as relocation.

3. Planet

Sustainable infrastructure must be environmentally safe and develop its role as a tool to adapt to extreme weather and climate change. This surely is achieved by utilising natural resources and ecosystems responsibly.

From: <https://chandra-asri.com/en/blog/sustainable-infrastructure>

After-text exercises

1. Do a comprehension quiz:

1. What is the main purpose of sustainable infrastructure?
 - a) to increase short-term profits only
 - b) to provide economic, social, and environmental benefits in the long term
 - c) to reduce population growth
 - d) to replace all old infrastructure
2. Which global initiatives are supported by sustainable infrastructure?
 - a) SDGs and climate targets
 - b) only economic policies
 - c) military development programs
 - d) local taxation policies
3. Which of the following is an environmental aspect of sustainable infrastructure?
 - a) creating local jobs
 - b) reducing greenhouse gas emissions
 - c) ensuring market competition
 - d) promoting community involvement
4. What is included in the social dimension of sustainable infrastructure?
 - a) maximising ROI
 - b) accessibility for people with disabilities
 - c) minimising operational costs
 - d) increasing NPV
5. How does sustainable infrastructure contribute to the economy?
 - a) by ignoring local employment
 - b) by promoting financial efficiency, job creation, and innovation
 - c) by focusing only on resource extraction
 - d) by eliminating government regulations
6. Governance in sustainable infrastructure emphasises:
 - a) transparency, accountability, and sustainability
 - b) secretive planning
 - c) short-term profit maximization
 - d) ignoring community input
7. What is “hard infrastructure”?
 - a) financial regulations
 - b) physical assets like hospitals and schools
 - c) community engagement programs
 - d) renewable energy policies

8. What does “soft infrastructure” refer to?
 - a) physical bridges and roads
 - b) assets enabling public access to social rights and services
 - c) energy-efficient buildings
 - d) wastewater systems
9. Which principle describes the “triple bottom line” (TBL)?
 - a) people, profit, planet
 - b) productivity, planning, profit
 - c) policy, process, performance
 - d) pollution, population, profit
10. How does sustainable infrastructure address climate change?
 - a) by using natural resources responsibly and adapting to extreme weather
 - b) by building only concrete structures
 - c) by ignoring environmental concerns
 - d) by relocating populations unnecessarily

2. Answer the questions:

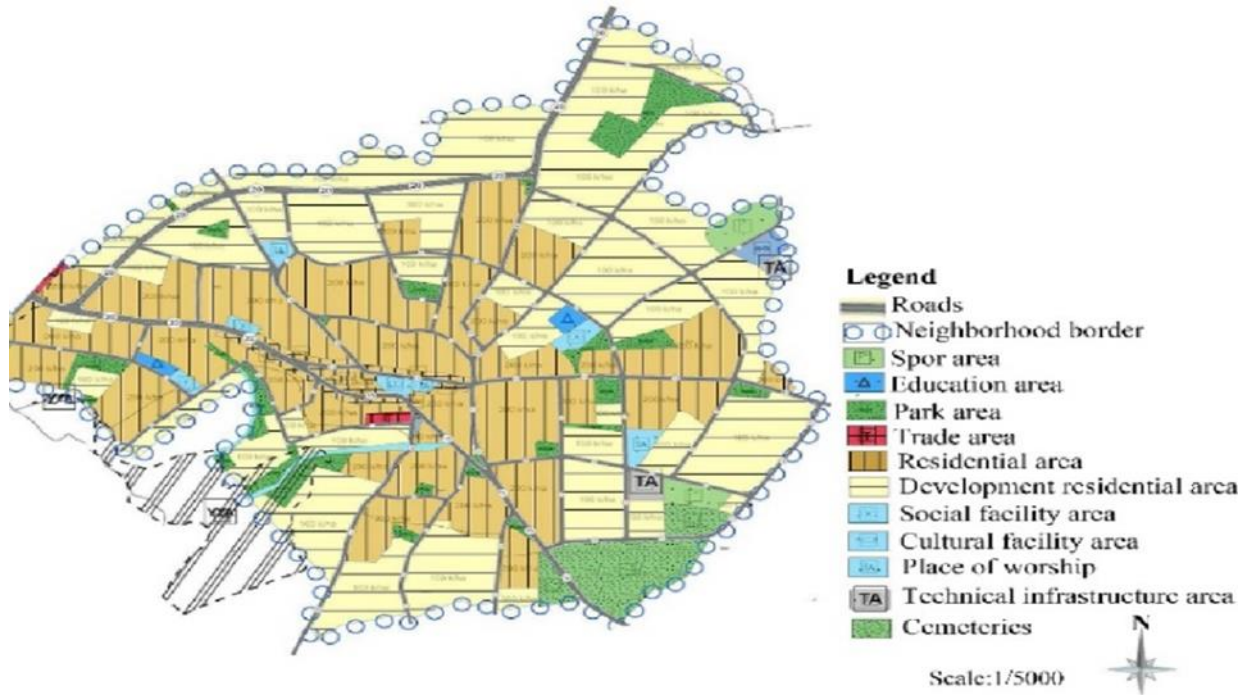
- 1) Explain why sustainable infrastructure is important for achieving the SDGs.
- 2) How does the environmental dimension of sustainable infrastructure reduce negative impacts?
- 3) Describe how social inclusion is ensured through sustainable infrastructure planning.
- 4) What role does governance play in sustainable infrastructure development?
- 5) Differentiate between hard and soft infrastructure with examples.
- 6) How does sustainable infrastructure contribute to economic development over the long term?

3. True / false:

- 1) Sustainable infrastructure only focuses on environmental benefits.
- 2) Accessibility for people with disabilities is part of the social dimension.
- 3) Hard infrastructure includes physical assets like power plants and bridges.
- 4) The triple bottom line includes profit, people, and planet.
- 5) Soft infrastructure is not necessary for sustainable urban development.
- 6) Sustainable infrastructure ignores climate adaptation and extreme weather risks.

4. **Watch a video** <https://www.youtube.com/watch?v=V-kECJw3yIQ> and write down the key aspects of green infrastructure. Discuss the questions: What challenges might engineers face when implementing green infrastructure in urban areas? How can sustainable and green infrastructure improve the quality of life for local communities?

5. **Speaking.** Provide comments on the zoning of this area and include your proposals for improvement.



Zoning plan of the Esentepe Neighborhood (Çankırı Municipality,
<https://share.google/images/VOpawYTzNzwJRJqiB>)

UNIT 14. SUSTAINABLE URBAN PLANNING



THEORETICAL PART WRITING URBAN PLANNING REPORT

From the perspective of technical writing, urban planning reports are characterised by clarity, conciseness, and objectivity. They often employ specialised terminology related to land use, zoning, infrastructure, and environmental impact. At the same time, accessibility is crucial, as reports are addressed not only to experts but also to policymakers, stakeholders, and sometimes the general public. Therefore, the theoretical requirement is to balance technical accuracy with communicative transparency.

Another theoretical dimension is the multidisciplinary nature of urban planning. A report integrates knowledge from architecture, engineering, environmental science, economics, sociology, and law. This multidisciplinary nature affects the style of writing: it requires integration of data from maps, charts, and statistical models into a coherent textual narrative. The report must demonstrate not only the current state of urban systems but also provide projections and scenarios that reflect future urban growth and sustainability challenges.

Finally, the theoretical basis of report writing emphasises the role of planning as a normative activity. Unlike neutral scientific reports, urban planning reports inherently involve value judgments, since they propose solutions that prioritise certain social groups, economic strategies, or environmental concerns. The theoretical expectation is that such reports remain transparent about their assumptions, criteria, and planning models.

The syntactic features are typical of scientific-technical style with some official-business elements:

Passive Constructions. Passive voice is frequent to focus on processes and results, not on the planner:

“The land is divided into three functional zones.”

“Data were collected from the municipal census.”

Nominalisation. Heavy use of nouns instead of verbs (a typical feature of scientific-technical style):

“Implementation of the project requires coordination of resources.”

Instead of “To implement the project, resources must be coordinated.”

Impersonality and Objectivity. Impersonal constructions are common:

“It is recommended that...”

“Attention should be given to...”

Urban planning report

An urban planning report is a document detailing the current and future development of a city or region, focusing on strategies for sustainable growth, improved infrastructure, and enhanced quality of life.

Urban Planning Report Template

Title of Project: _____

Prepared by: _____

Date: _____

Location: _____

1. Executive Summary

(Brief overview of the project, main goals, and key recommendations.)

Purpose of the report: _____

Main objectives: _____

Key findings/recommendations: _____

2. Introduction

(Introduce the urban planning project and its context.)

Background of the project: _____

Importance of the project: _____

Scope and objectives: _____

3. Site Analysis

(Describe the site and its conditions.)

Location: _____

Topography: _____

Existing infrastructure: _____

Environmental considerations: _____

Challenges and opportunities: _____

4. Land Use and Zoning

(Detail the zoning plan and land-use allocation.)

Residential zones: _____

Commercial zones: _____

Industrial zones: _____

Green spaces/parks: _____

Public facilities (schools, hospitals, community centres):

Special considerations (mixed-use, heritage areas, etc.):

5. Transport and Connectivity

Road network layout: _____

Public transport (buses, metro, trams, etc.): _____

Pedestrian/cycling paths: _____

Parking and traffic management: _____

6. Water, Sanitation, and Utilities

Water supply: _____

Wastewater treatment: _____

Stormwater management: _____

Stormwater management: _____
Electricity and energy: _____
Communication networks: _____

7. Sustainability Measures

(Describe environmental and sustainable design initiatives.)

Energy efficiency measures: _____

Green infrastructure: _____

Waste management and recycling: _____

Climate resilience: _____

8. Recommendations

(List actionable steps to improve urban development.)

Urban Planning Report: Riverside Residential District

Prepared by: [Your Name]

Date: [Insert Date]

Location: Riverside City, Country

Sample

1. Executive Summary

This report evaluates the proposed Riverside Residential District, focusing on land use, transport, water supply, sanitation, and public spaces. The goal is to create a sustainable, liveable, and safe neighbourhood for approximately 15,000 residents. Key recommendations include mixed-use zoning, green infrastructure, and integrated transport solutions.

2. Introduction

Urban planning ensures orderly development while balancing social, economic, and environmental needs. Riverside City is expanding rapidly, and a new residential district is necessary to accommodate population growth. This report presents the planning blueprint and proposes sustainable infrastructure solutions.

3. Site Analysis

Location: Eastern bank of the Riverside River, 2 km from the city centre.

Topography: Mostly flat with minor slopes; suitable for residential development.

Existing Infrastructure: Limited road access; water supply pipelines exist but require extension.

Environmental Considerations: Adjacent wetlands; requires flood mitigation and preservation of biodiversity.

4. Land Use and Zoning

Residential Zones: 60% of the area; mix of low-rise and medium-rise buildings.

Commercial Zones: 15% of the area; local shops, cafes, and offices near main streets.

Green Spaces: 15% of the area; parks, playgrounds, and pedestrian walkways.

Public Facilities: 10% of the area; schools, healthcare centres, and community buildings.

Zoning Notes: Mixed-use zones are encouraged near transport hubs to reduce car dependence.

5. Transport and Connectivity

Road Network: Grid layout with main and secondary streets.

Public Transport: Bus routes connecting to the city centre; a future light rail stop planned.

Pedestrian and Cycling Paths: An Extensive network connecting residential areas to parks and commercial zones.

Parking: Centralised multi-storey parking to reduce street congestion.

6. Water Supply and Sanitation

Water Supply: Connection to city water network; rainwater harvesting implemented for irrigation.

Wastewater: Modern sewage system with a treatment plant on the district outskirts.

Stormwater Management: Permeable pavements and green infrastructure to reduce runoff and flooding risk.

7. Sustainability Measures

Energy-efficient building codes for all new structures.

Solar panels for public buildings.

Waste recycling points throughout the district.

Preservation of wetlands and green corridors.

SELF-ASSESSMENT

1. What is the primary goal of the Riverside Residential District project?
 - a) increase industrial output
 - b) create a sustainable, liveable, and safe neighbourhood
 - c) build only commercial zones
 - d) reduce city population
2. How far is the site from the city centre?
 - a) 5 km
 - b) 2 km
 - c) 10 km
 - d) 1 km
3. What percentage of the area is allocated for residential zones?
 - a) 50%
 - b) 60%
 - c) 70%
 - d) 40%
4. Which measure is proposed to reduce car dependence?
 - a) centralised parking only

- b) mixed-use zoning near transport hubs
 - c) limiting public transport
 - d) high-rise residential buildings
5. How will stormwater management be addressed in the district?
- a) large underground tanks only
 - b) permeable pavements and green infrastructure
 - c) direct discharge to the river
 - d) no stormwater management is planned
6. What type of public transport is currently planned?
- a) metro and taxi service
 - b) bus routes with a future light rail stop
 - c) tram lines only
 - d) ferry service
7. How much of the area is reserved for green spaces?
- a) 10%
 - b) 15%
 - c) 20%
 - d) 25%
8. Which sustainability measure is included for public buildings?
- a) solar panels
 - b) wind turbines only
 - c) diesel generators
 - d) no energy measures
9. What kind of buildings are allowed in the residential zones?
- a) only low-rise buildings
 - b) only high-rise buildings
 - c) mix of low-rise and medium-rise buildings
 - d) industrial buildings
10. Where is the wastewater treatment plant located?
- a) in the city centre
 - b) on the district outskirts
 - c) next to residential zones
 - d) near the commercial area

PRACTICAL PART

I.Preparation

Before reading, study the following vocabulary:

Beacon
Sustainable
Heat exchangers
Vacuum collectors
Sound-insulated
Photovoltaic panels
Aquifer thermal energy storage
Passive design

BREEAM certification
Futureproof

II. Reading Text

Green buildings in Europe Marco Polo Tower by Behnisch Architekten, Hamburg, Germany



The 55-meter-tall tower serves as a beacon for the nearby Cruise Ship Terminal and the Promenade on Strandkai. It is a distinctive and extraordinary sculptured building centred on delivering opulent living quarters and an all-encompassing sustainable green building design. Additional sunshades are not required because of the overhanging terraces above, that provide shade to the recessed façades from the sun's direct rays.

This building implements strategies like **conversion of heat into cooling for the apartments utilizing heat exchangers** and vacuum collectors on the roof. Innovative sound-insulated air louvres allow for natural airflow in the sleeping spaces without adding to outside noise pollution.

CopenHill by Bjarke Ingels Group, Copenhagen, Denmark



The enormous project, which had a budget of 3.5 billion Danish kroner, was at one point the **greatest environmental endeavour in Denmark**. Its construction set a precedent for community involvement and context integration. The 41,000 m² proposal transforms the infrastructure into an architectural monument for the city by including an urban recreation centre and an **environmental teaching centre that attracts citizens to appropriate the space**.

Furnaces, steam, and turbines beneath the sloping roof transform 440,000 tons of trash annually into clean energy to provide **150,000 homes with heating and power**. Aluminium bricks that are 1.2m high by 3.3m broad and arranged like enormous bricks overlapping each other make up the continuous façade of CopenHill

The Edge by PLP Architecture, Amsterdam, The Netherlands



Having the highest BREEAM rating for an office building, **The Edge is a landmark for The Netherlands' sustainability efforts**. It is a 40,000m² office building in Amsterdam's Zuidas business district that was created for the global financial firm Deloitte.

It incorporates numerous smart technologies to create adaptable and intelligent workspaces, some of which are below:

- Incorporating an array of photovoltaic panels in the roof and the south-facing facade, the largest amount of solar panels of any European office building.
- All of the energy required for heating and cooling is provided by an aquifer thermal energy storage system.
- Each luminaire within the building is computer-controlled by a system created by PHILLIPS, reducing the energy consumption by 50% compared to TL-5 Lighting.
- Passive design that creates unique facades that take advantage of their orientation. Each facade accommodates its design to respond to the amount of sunlight, whether by including solar panels, using louvres to provide shade, or including thicker glass to dampen noise from the exterior.

With these strategies, **The Edge uses 70% less electricity than other office buildings.** This building received BREEAM certification to assess the most innovative aspects of its design and construction. The building's overall concept has always been to be exemplary, to stand out as a future-proof office that raises standards in the Netherlands as well as internationally

From: <https://www.novatr.com/blog/green-building-projects>

After-text exercises

1. Do a comprehension quiz

1. What is the purpose of a "beacon" as described in the text?

- a) a device for cooling buildings
- b) a landmark or guiding signal
- c) a sustainable energy source
- d) a type of façade design

2. What does "BREEAM certification" evaluate?

- a) architectural aesthetics
- b) environmental performance and sustainability
- c) cost-efficiency in construction
- d) noise insulation techniques

3. What do "photovoltaic panels" primarily do?

- a) convert heat into cooling energy
- b) generate electricity from sunlight
- c) provide noise insulation
- d) store thermal energy underground

4. What is the function of "heat exchangers"?

- a) They cool the air using natural airflow.
- b) They convert sunlight into energy.
- c) They transfer heat between systems to provide cooling or heating.
- d) They dampen noise from external sources.

5. What is "passive design" in the context of building construction?

- a) using materials that absorb maximum sunlight
- b) designing façades that adapt to environmental conditions for efficiency
- c) incorporating advanced soundproofing systems
- d) installing solar panels on all sides of a building

6. What are "vacuum collectors" used for in the building?

- a) cleaning interior spaces efficiently
- b) collecting trash for energy transformation
- c) harnessing solar energy for cooling or heating
- d) storing thermal energy underground

7. What benefit do "sound-insulated" louvres provide?

- a) better energy efficiency
- b) natural airflow without external noise interference
- c) reduced maintenance costs

d) improved solar energy capture

8. What does it mean if a building is described as "futureproof"?

- a) It is resistant to earthquakes.
- b) It incorporates technologies and designs suitable for future needs.
- c) It cannot be damaged by external elements.
- d) It will never require maintenance.

2. Answer the questions:

- 1) How does the overhanging terrace design contribute to the sustainability of the building?
- 2) What strategies does CopenHill use to transform waste into clean energy?
- 3) How do aquifer thermal energy storage systems improve energy efficiency in the Edge building?
- 4) In what ways do passive design features optimise the performance of The Edge?
- 5) Why is BREEAM certification significant for evaluating modern buildings?

3. True / false:

- 1) The recessed façades of the 55-meter-tall tower require additional sunshades.
- 2) CopenHill transforms 440,000 tons of trash annually into heating and electricity for homes.
- 3) The Edge building uses solar panels on its roof and north-facing façade.
- 4) Sound-insulated louvres in the tower allow natural airflow without adding noise pollution.
- 5) BREEAM certification assesses a building's compliance with local safety regulations.

4. Match the words with their definitions:

Words	Definitions
1. Beacon	a) Devices that convert sunlight into electricity
2. Photovoltaic panels	b) A building approach that uses natural features and orientation to improve energy efficiency
3. Passive design	c) Designed to remain relevant and functional in the future, often by incorporating adaptable technologies
4. Heat exchangers	d) Solar energy systems that use vacuum tubes to convert sunlight into heat
5. Sustainable	e) An assessment method that measures the sustainability and environmental impact of buildings
6. BREEAM certification	f) A method of storing thermal energy in underground water reservoirs
7. Aquifer thermal storage	g) Designed to prevent or reduce the transmission of noise

Words	Definitions
8. Futureproof	h) A landmark or guiding signal, often used for navigation or inspiration
9. Sound-insulated	i) Capable of being maintained over time without depleting resources or causing harm to the environment
10. Vacuum collectors	g) Systems that transfer heat between two media for cooling or heating

5. Speaking. Speak on sustainable construction in Singapore (or any other country)

6. Writing. Imagine you are an architect tasked with designing a sustainable residential building for an urban environment. Write a 150-200-word proposal describing:

1. Three sustainability features you would incorporate and their benefits.
2. How would your design enhance the quality of life for residents?
3. The challenges you might face in implementing your design and possible solutions.

Example Start:

"Our proposed residential building will prioritise sustainability and energy efficiency to set a benchmark in urban architecture. The first feature will be photovoltaic panels integrated into the roof and south-facing façades to harness solar energy, providing up to 70% of the building's electricity needs ..."

Final Test

- 1. Which of the following is a main goal of urban planning?**
 - A) Maximising land prices
 - B) Coordinating land use and infrastructure
 - C) Limiting housing supply
 - D) Privatising public spaces
- 2. Which renewable energy source is often integrated into sustainable buildings for heating and cooling?**
 - A) Geothermal
 - B) Wind
 - C) Nuclear
 - D) Hydroelectric
- 3. What is the concept of "smart buildings"?**
 - A) Buildings with automated systems for energy, security, and comfort
 - B) Buildings that are easy to build and cheap
 - C) Buildings that require no maintenance
 - D) Buildings that are entirely made of glass
- 4. What is a high-rise building?**
 - A) A building with fewer than five stories
 - B) A building with more than 10 stories
 - C) A building constructed primarily with timber
 - D) A building with a single floor for residential use
- 5. Which type of building is primarily used for manufacturing or production purposes?**
 - A) Commercial building
 - B) Industrial building
 - C) Residential building
 - D) Institutional building
- 6. Which type of building is typically constructed to house schools, hospitals, or other public service institutions?**
 - A) Industrial
 - B) Commercial
 - C) Institutional
 - D) Residential
- 7. What distinguishes a sustainable or "green" building from a traditional building?**
 - A) The use of non-renewable materials
 - B) The use of traditional construction methods
 - C) Focus on energy efficiency, renewable materials, and minimising environmental impact
 - D) The aesthetic design
- 8. What is the purpose of zoning in urban planning?**
 - A) To classify buildings by height
 - B) To control land use and development patterns
 - C) To calculate taxes

- D) To regulate water use only
- 9. Mixed-use zoning allows:**
- A) Only industrial uses
 - B) Housing separated from commerce
 - C) Commercial, residential, and recreational uses together
 - D) Agricultural use inside cities
- 10. Which system helps manage stormwater sustainably?**
- A) Water privatisation
 - B) SuDS (Sustainable Drainage Systems)
 - C) Street widening
 - D) Rainwater tariffs
- 11. The main aim of urban sanitation planning is:**
- A) To provide entertainment
 - B) To reduce environmental pollution and protect health
 - C) To maximise water sales
 - D) To increase industrial growth
- 12. Which principle best defines inclusive city design?**
- A) Serving only business districts
 - B) Ensuring accessibility for all social groups
 - C) Limiting space for pedestrians
 - D) Encouraging gated communities
- 13. A compact city model emphasises:**
- A) High-density mixed-use areas
 - B) Expanding highways
 - C) Large single-family lots
 - D) Isolated industrial zones
- 14. What is an “urban green belt”?**
- A) A financial tax incentive
 - B) A zone of green space surrounding a city
 - C) An industrial corridor
 - D) A highway ring road
- 15. Which design helps mitigate the urban heat island effect?**
- A) Removing trees
 - B) Using reflective materials and more green cover
 - C) Increasing parking areas
 - D) Widening asphalt roads
- 16. The concept of “urban resilience” refers to:**
- A) Ability to withstand and recover from shocks (climate, disasters, etc.)
 - B) Expanding housing only
 - C) Increasing industrial productivity
 - D) Privatisation of land
- 17. Adaptive reuse of buildings is important because:**
- A) It avoids using old materials
 - B) It transforms existing structures for new purposes
 - C) It demolishes cultural heritage

- D) It prevents housing development
- 18. Which planning method increases community resilience?**
- A) Ignoring climate risks
 - B) Integrating disaster risk reduction strategies
 - C) Encouraging low-density car use
 - D) Reducing public participation
- 19. A “future-proof city” is designed to:**
- A) Maximise present profit only
 - B) Withstand long-term social, economic, and climate challenges
 - C) Avoid technological innovations
 - D) Eliminate public services
- 20. Which factor is most important in adaptive city design?**
- A) Flexibility in infrastructure and land use
 - B) Strict uniform zoning only
 - C) Fixed traditional designs
 - D) Ignoring community feedback
- 21. Which is a key principle of sustainable urban transport?**
- A) Dependence on private cars
 - B) Promotion of walking, cycling, and public transport
 - C) Unlimited road expansion
 - D) Air travel inside city centres
- 22. Which transport system reduces emissions and congestion?**
- A) Mass rapid transit (metro, BRT)
 - B) Private car ownership grew
 - C) Expanding motorways
 - D) Low-density highways

APPENDICES

GLOSSARY OF TERMS

1. **Adaptive reuse of buildings** – адаптивне повторне використання будівель
2. **Affordable housing** – доступне житло
3. **Affordable transport access** – доступність транспорту
4. **Air quality management** – управління якістю повітря
5. **Blue-green infrastructure** – блакитно-зелена інфраструктура
6. **Brownfield redevelopment** – рекультивація промислових територій
7. **Building code compliance** – дотримання будівельних норм
8. **Circular economy in urban planning** – циркулярна економіка в містобудуванні
9. **Climate-adaptive design** – кліматоадаптивний дизайн
10. **Climate-proof infrastructure** – інфраструктура, захищена від кліматичних ризиків
11. **Community land trust** – земельний траст громади
12. **Community resilience planning** – планування стійкості громади
13. **Compact city model** – модель компактного міста
14. **Cultural heritage preservation** – збереження культурної спадщини
15. **Decentralized energy systems** – децентралізовані енергосистеми
16. **Decentralized wastewater treatment** – децентралізоване очищення стічних вод
17. **Digital twin for cities** – цифровий двійник міста
18. **Digital urban governance** – цифрове міське врядування
19. **Disaster risk reduction** – зменшення ризику катастроф
20. **Ecosystem services** – екосистемні послуги
21. **Energy-efficient building design** – енергоефективне проектування будівель
22. **Energy transition strategy** – стратегія енергетичного переходу
23. **Environmental impact assessment** – оцінка впливу на довкілля
24. **Equitable city development** – справедливий міський розвиток
25. **Flood risk management** – управління ризиком підтоплень
26. **Future-proof city design** – дизайн міста з урахуванням майбутніх викликів
27. **Geospatial mapping** – геопросторове картування
28. **Green infrastructure planning** – планування зеленої інфраструктури
29. **Greenfield development** – освоєння незабудованих територій
30. **Heritage-sensitive planning** – чутливе до спадщини планування
31. **Housing density** – щільність житлової забудови
32. **Inclusive city design** – інклюзивний міський дизайн
33. **Infrastructure resilience** – стійкість інфраструктури
34. **Integrated disaster response planning** – інтегроване планування реагування на катастрофи
35. **Integrated land-use planning** – інтегроване планування землекористування
36. **Integrated mobility hubs** – інтегровані транспортні хаби
37. **Integrated transport planning** – інтегроване транспортне планування
38. **Land acquisition strategy** – стратегія викупу землі

39. **Land-use zoning** – зонування використання земель
40. **Low-Rise Building** – низькоповерхова будівля
41. **Lean Construction** – будівництво без втрат
42. **Mobility-as-a-Service (MaaS)** – мобільність як послуга
43. **Mixed-use development** – багатофункціональна забудова
44. **Municipal solid waste management** – управління твердими побутовими відходами
45. **Noise barrier design** – проектування шумозахисних бар'єрів
46. **Noise pollution control** – контроль шумового забруднення
47. **Noise-sensitive land use** – землекористування, чутливе до шуму
48. **Participatory planning** – партисипативне планування
49. **Public health in urban planning** – громадське здоров'я у містобудуванні
50. **Public housing policy** – політика соціального житла
51. **Public participation framework** – рамки громадської участі
52. **Public-private partnership (PPP)** – державно-приватне партнерство
53. **Public realm** – громадський простір
54. **Renewable energy corridors** – коридори відновлюваної енергії
55. **Renewable energy integration** – інтеграція відновлюваної енергії
56. **Resilient housing models** – моделі стійкого житла
57. **Resilient urban economy** – стійка міська економіка
58. **Slum upgrading** – модернізація нетрів
59. **Smart city infrastructure** – інфраструктура розумного міста
60. **Smart grid integration** – інтеграція інтелектуальних мереж
61. **Smart growth** – розумне зростання
62. **Social housing regeneration** – відновлення соціального житла
63. **Spatial justice** – просторове правосуддя
64. **Sustainable building certification** – сертифікація сталого будівництва
65. **Sustainable construction materials** – стійкі будівельні матеріали
66. **Sustainable drainage systems (SuDS)** – стійкі дренажні системи
67. **Sustainable tourism planning** – планування сталого туризму
68. **Sustainable urban drainage** – стале міське водовідведення
69. **Sustainable mobility** – стійка мобільність
70. **Transit corridor** – транспортний коридор
71. **Transit demand management** – управління попитом на транспорт
72. **Transit equity** – транспортна рівність
73. **Transit-oriented corridors** – коридори, орієнтовані на транспорт
74. **Transit-oriented development** – розвиток, орієнтований на транспорт
75. **Urban biodiversity** – міське біорізноманіття
76. **Urban carrying capacity** – містобудівна пропускна спроможність
77. **Urban climate action plan** – план міських дій щодо клімату
78. **Urban ecological footprint** – екологічний слід міста
79. **Urban economic competitiveness** – економічна конкурентоспроможність міста
80. **Urban economic zoning** – економічне зонування міста
81. **Urban financial management** – фінансове управління містом

82. **Urban food systems** – міські продовольчі системи
83. **Urban governance** – міське врядування
84. **Urban green belts** – міські зелені пояси
85. **Urban growth boundary** – межа міського зростання
86. **Urban heat island effect** – ефект теплового острова
87. **Urban land policy** – політика міських земель
88. **Urban logistics management** – управління міською логістикою
89. **Urban monitoring systems** – системи моніторингу міста
90. **Urban morphology** – міська морфологія
91. **Urban poverty alleviation** – зменшення міської бідності
92. **Urban policy framework** – рамки міської політики
93. **Urban regeneration** – міське відновлення
94. **Urban resilience** – міська стійкість
95. **Urban security strategy** – стратегія міської безпеки
96. **Urban sprawl** – неконтрольоване розростання міст
97. **Urban transport network analysis** – аналіз міської транспортної мережі
98. **Urban water management** – управління міськими водними ресурсами
99. **Vertical urban farming** – вертикальне міське фермерство
100. **Walkability index** – індекс придатності для пішоходів
101. **Waste-to-energy systems** – системи перетворення відходів на енергію
102. **Water-sensitive urban design** – водочутливий міський дизайн

COMMON PHRASES USED IN ACADEMIC TEXTS

Актуальний up-to-date (важливий/популярний сьогодні), relevant, pressing, urgent (нагальний), ...is/are of great importance today, is/are currently of great interest (*типова помилка*: actual; *уникайте*: topical)

Актуальність significance, importance, relevance (*уникайте*: actuality, topicality)

Анотація abstract

Важливий significant, important

Визначити define (дати дефініцію), determine (дату тощо), identify, indicate, outline, specify (особливості)

Виконувати (див. "здійснювати")

Виникнення the rise, emergence, appearance, origin (походження)

Висвітлити (тему, проблему) cover, describe, report on, highlight

Висновки conclusion

Виявити identify (визначити), show, find out, reveal, discover (відкрити щось нове)

Відзначати note, stress (наголосити на ...)

Відповідний relevant

Вітчизняний (тобто український) Ukrainian (*типова помилка*: native, domestic)

Вплив impact (сильний вплив), effect (effects), influence (довготривалий)

Вивчено... The article explores (examines) ... *Можливий варіант у пасивному стані*: ... is/are explored (examined)

Визначено особливості... The specific features of ... are outlined

Визначити основну думку (причини) identify the main argument (the causes)

Висвітлено проблему ... The issue concerning ... is highlighted

Виходячи з досвіду ... Judging by the experience of ... On the basis of ...

Виявлено... ... is/are found out

Відповідно, ... Accordingly, ...

В контексті ... within (in) the context of ..., from the perspective of ..., in relation to ...

В умовах ... in/under the conditions of ...

Головну (основну) увагу приділено... Particular (special) attention is paid (drawn) to... The author focuses on ...

Даний (цей) ... this ..., the present ..., the current

Діяльність activities (*типова помилка*: activity, це – активність)

Дозволити (дати можливість) make it possible to ..., enable, permit

Доповідь report

Дослідження research (наукове вивчення взагалі), study (конкретна наукова розвідка, наукова стаття), case study (конкретне дослідження)

Досліджувати study, analyze, explore, examine (*типова помилка*: research)

Досягнення (у значення “прогрес”) advances in ...
Детально описано ... is/are described in detail
Доведено факт ... The author has established the fact that ...
Доведено, що... it is shown that ... The author shows (demonstrates) that ...
 The author argues that ...
Досліджено... The paper/author explores... (examines ..., studies..., investigates..., describes ..., considers ...). *Можливий варіант у пасивному стані:* ... is/are explored (examined, etc.)
Зазначено, що... The author states (shows, points out, explains, indicates, develops the view) that ... It is claimed that ...
За цих умов (обставин) under these conditions (circumstances)
Звернути увагу на ... draw attention to ...
Здійснене дослідження the study, this study (*типова помилка:* the conducted study)
Здійснювати дослідження conduct a study
Зображено... is shown (demonstrated)
З позиції ... from the standpoint of ...
Зроблено спробу визначити An attempt is made at identifying (defining) ...
Закономірності laws, regularities, a regular pattern
Застосовувати apply (метод, правило, теорію), use (використовувати: наприклад, матеріал)
Збірник (наукових праць) journal
Здійснювати perform (оцінювання), conduct (дослідження, аналіз)
Значення (важливість) importance, significance, implications, relevance
Зокрема more specifically, particularly
Ключові слова keywords (key words)
Коло проблем a number of issues, a whole range of, wide variety of
Конкретний specific, particular
Лежати в основі underlie
Наведено аналіз ... The article provides an analysis of ... The article provides a detailed examination of ...
Наведено дані про ... Data are given about ...
Наведено приклади ... This article provides examples of gives examples showing...
Наведено характеристику... ... is/are described
На підставі (на основі, на базі)... considering ..., drawing on ..., proceeding from ..., having analyzed ..., ... is based on ...
На початку / наприкінці (80-х. pp. XX ст.) in the early / late 80s of the 20th century (1980s)
На прикладі (на матеріалі ...) the case of, by ...ing, proceeding from, having analyzed ..., ... is based on ..., using ... as an example (*Типова помилка:* by the example of ...)
На сучасному етапі at present
Наголошувати emphasize, stress

Назва (статті) (research paper) title

Напрямок line, trend, direction, research area (напрямок наукових досліджень), the main activities, the area of activities (напрямок діяльності), policy

Обґрунтований justified

Обґрунтовувати justify, give a rationale for ..., substantiate

Обґрунтування main arguments, justification, motivation

Обсяг (матеріалу, роботи) the scope

Огляд overview (огляд проблем), survey, the literature review (огляд літератури)

Окреслити (намітити) outline

Описати describe

Опитування survey

Основний main, principal, major, key

Особливості characteristic (specific, distinctive) features, characteristics (peculiarities означає “щось незвичне”)

Охарактеризувати describe (описати, дати характеристики), identify (визначити), characterize as ... (охарактеризувати як ...)

Охоплювати cover (певний обсяг роботи з наголосом на повноту охоплення), encompass (певні теми з наголосом на додатковий характер інформації)

Окреслено коло питань стосовно ... is/are ... highlighted

Окреслено характерні риси... Characteristic features of ... are outlined

Описано ... The paper/author describes (offers a description of...). *Або:* ... is/are described

Особливу увагу приділено ... Particular (special) attention is paid to... The paper concentrates on ... focuses on ... Extensive coverage is given to ... Much attention is given to ...

Охарактеризовано... The author explores (describes, examines, analyzes)... is/are described (identified)

Питання (проблеми) issues, problems (*типова помилка:* questions)

Підхід до approach to

Повідомлення, повідомляти report

Показати show, demonstrate, indicate

Поняття concept

Попередні дослідження previous research, research publications

Постановка проблеми problem statement, research justification

Пояснення (наукове) interpretation

Пояснити explain, demonstrate, illustrate, argue, explicate, elucidate, interpret

Праця (наукова) study, paper, research publication, work (не про свою роботу)

Представити present, provide

Причина cause (те, що спричинило щось), reason (підстава, мотив)

Проаналізувати analyze, explicate

Проблеми problems (те, що потребує вирішення), issues (теми, що розглядаються)

Прокоментувати interpret (матеріал, дані)

Пропозиція suggestion (ідея для розгляду),

Пропонувати suggest (ідею для розгляду), offer (щось конкретне), propose

Піднімати питання ... raise the issue of ...

Показано вплив... The influence (impact, effect) of ... on ... is shown

Показано значення... The importance (significance) of ... for ... is stressed

Показано на прикладі (проілюстровано) ... is exemplified by

Пояснити на прикладі ... illustrate by ...ing

Представлено огляд... This paper presents a review of ...

Проаналізовано особливості... characteristic (specific, distinctive) features of ... are analyzed. *Або:* The author analyzes ... (presents/provides an analysis of ...)

Проблему розглянуто шляхом ... The study investigates this issue by examining ...

Проведено (здійснено) дослідження... (*див. Досліджено*)

Розв'язати проблему find a solution to the problem

Розглядаються проблеми... The issues addressed are ...

Розглянуто... (У статті розглянуто...) The paper deals with ... This article discusses the issue of... The study is concerned with ... The paper describes ... The paper is concerned with ... The author considers ... *Або:* ... is (are) described (discussed, considered, etc.)

Реалізувати ідею implement an idea

Результати results, findings, outcomes

Резюме (короткий виклад змісту статті) summary

Розглядати discuss, describe, consider, study, explore, cover, investigate, view (treat)... as ... (розглядати щось як...) метод

Розкрити show, describe, find, demonstrate, explain, unfold, reveal (*помилка:* disclose)

Розробити develop (теорію), design (план)

Розробка research, study (наукова діяльність, праця), development, elaboration (ідеї)

Розуміння insight into... (розуміння наукове), scientific interpretation (розуміння проблеми)

Світогляд world-view, world outlook

Світоглядний world-view, relating to world outlook, philosophical, ideological

Соціокультурний socio-cultural

Специфіка specific features (nature, character) (*типова помилка:* specificity)

Спостерігати observe, study

Стан дослідження state of research

Стаття (наукова) article, paper, study

Стосовно relating to
Суттєвий considerable
Сучасне суспільство contemporary society
Сучасний present, present-day, current (нинішній), modern, up-to-date
 (такий, що відповідає вимогам часу), contemporary (того ж часу, про який
 ідеться)
Сучасність our time (*уникайте*: contemporaneity)
Систематизовано й узагальнено... ... is/are systematized and summerized
Стаття присвячена питанням... The article is devoted to...
 The article deals (is concerned) with... The paper touches upon the issue of...
 The study addresses the problems of ... *уникайте*: dedicated to ...)
Стисло описано ... is/are described in short
Сфера досліджень the field (area) of research
Творчість creative work (творча діяльність), works (доробок науковця,
 митця, письменника)
Тези доповідей conference reports, summaries, abstracts of reports
Тези доповідей (збірник) proceedings of the ... conference
Тлумачення explanation
Узагальнити generalize (отримані результати), summarize (інформацію
 з попереднього досвіду, з прочитаної літератури)
Установити find out (з'ясувати), identify, demonstrate, prove
Установлено місце та роль... The position (place) and role of ... are
 identified
Установлено факт ... The author has established the fact that...
Уточнено... is/are specified
Характеристика (опис) description, outline
Характерний specific
Характерні риси (див. "особливості")
Явище phenomenon (множина: phenomena. *Типова помилка*:
 phenomenons)

Urban planning symbols

Symbol	English Term
	Water Supply / Hydrant
	Sewage / Drainage
	Electricity / Power Line
	School / Educational Facility
	Hospital / Health Centre
	Government / Civic Building
	Office / Commercial Building
	Residential Area / Housing
	Industrial Zone / Factory
	Shopping Mall / Retail Area
	Park / Green Space
	Open Space / Landscape
	Fountain / Water Feature
	Bridge / Overpass
	Construction Site / Roadwork
	Road / Street / Highway
	Traffic Signals / Control
	Bus Stop / Public Transport
	Metro / Subway Station
	Bicycle Path / Lane
	Railway / Train Line
	Recycling / Waste Management Facility
	Restricted Area / No Access

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Навчально-методичне видання

Іваненко Станіслав Валентинович
Мосієвич Лариса Василівна

**ПРОФЕСІЙНО-ОРІЄНТОВАНИЙ ПРАКТИКУМ ІНОЗЕМНОЮ
МОВОЮ**

Навчально-методичний посібник для здобувачів ступеня вищої освіти
магістра
спеціальності «Будівництво та цивільна інженерія»
освітньо-професійної програми «Міське будівництво та господарство»

Рецензент *В. Л. Вертегел*
Відповідальний за випуск *С. В. Іваненко*
Коректор *Л. В. Мосієвич*