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молоді та спорту України
Національний університет водного
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АНГЛІЙСЬКА МОВА

Навчальний посібник

Для студентів напряму
підготовки 6.060101 «Будівництво»

Рівне – 2011

УДК 811.111 (075)
ББК 81.2 я 7 Англ.
В 14

Затверджено вченою радою Національного університету водного господарства та природокористування.
(Протокол № 4 від « 29 » квітня 2011 р.)

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Вакуленко О.Л., Красовська А.М.
В 14 Англійська мова: Навчальний посібник. – Рівне: НУВГП, 2011. – 285 с.

У посібнику висвітлено основні положення граматичної структури, фонетики, лексичного складу англійської мови, що відповідає рівню В 2 . Ресурсний матеріал організовано поурочно таким чином, що він максимально спрямований на формування фахової компетенції користувача. До посібника увійшли автентичні тексти, які є базою для розвитку професійного спілкування. Розроблено систему перед- та післятекстових завдань, які сприяють інтегрованому розвитку мовленнєвих умінь – аудіюванню, монологічному та діалогічному мовленню, читанню та письму, а також скеровують самостійну роботу студентів. До кожного тематичного блоку уроків додається навчально-контролюючий тестовий тренінг.

Розраховано на студентів вищих навчальних закладів денної, заочної та дистанційної форм навчання напряму підготовки «Будівництво». Книга буде корисною також для студентів, які навчаються за освітньо-кваліфікаційним рівнем магістр, а також всім тим, хто хоче підвищити свою професійну компетенцію в такій життєво важливій царині знань як будівництво.

УДК 811.111 (075)
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ПЕРЕДМОВА

Цей навчальний посібник з'явився **як відповідь на нагальну потребу студентів ВНЗ у сучасних навчальних матеріалах**, які б сприяли підвищенню рівня володіння англійською мовою і, водночас, знайомили їх з різними аспектами майбутньої спеціальності. Важливою передумовою для цього було прийняття **Типової програми з англійської мови для професійного спілкування (АМПС)**, яка створена за сприяння Британської Ради в Україні та рекомендована Міністерством освіти і науки України (Київ, 2005). Програма підкреслює, що **однією із найважливіших стратегій подолання неадекватності існуючих навчальних матеріалів є створення нових підручників та посібників відповідно до потреб студентів**.

Даний посібник з англійської мови реалізує поставлене завдання, відображаючи практику авторського колективу в **організації ресурсних матеріалів, зорієнтованих на студентів ВНЗ за напрямом підготовки 6.060101 «Будівництво».**

Концепція посібника грунтується на **комунікативній методиці** і сприяє розвитку мовної компетенції, посилюючи внутрішню мотивацію та інтерес студентів до вивчення англійської мови.

Цим зумовлена **структура** посібника **для студентів напряму підготовки «Будівництво»**, який складається із **вступу, двох частин і додатків** та базується на методичних засадах сучасного навчання іноземних мов, яке передбачає оволодіння студентами іншомовним професійним спілкуваннм шляхом формування та розвитку **міжкультурної комунікативної компетенції.**

Основними джерелами посібника є автентичні текстові матеріали з галузі будівництва. Деякі тексти пройшли мінімальну адаптацію з метою усунення певних граматичних та стилістичних труднощів.

Наукова новизна посібника полягає також у розробці системи вправ на основі останніх досягнень в галузі лінгвістики та методики вищої школи.

Інтерес представляють завдання **з проектної методики вивчення АМПС**. Вони надзвичайно ефективні у самостійній роботі студентів, оскільки стимулюють незалежний пошук тематично спорідненого матеріалу, розвивають творчі можливості студентів, підвищують мотивації вивчення як англійської мови, так

і різних аспектів спеціальності. Завдання подаються згідно з основними дидактичними принципами навчання – поступового збільшення труднощів, повторюваності основної лексики, циклічності.

Підбір сучасних актуальних для напряму «Будівництво» та цікавих в інформативному плані текстів та **розробка згідно з міжнародними стандартами системи вправ, яка включає також новітні досягнення педагогічної науки**, дають можливість, на нашу думку, досягти основної практичної мети навчання АМПС – сформувати у студентів загальні та професійно орієнтовані комунікативні мовленнєві компетенції (**лінгвістичну, соціолінгвістичну і прагматичну**) для **забезпечення їх ефективного спілкування в академічному та професійному середовищі в галузі будівництва** (Програма АМПС).

У **вступі** викладено **основи** науково-технічного перекладу, подаються необхідні теоретичні відомості щодо лексико-граматичних особливостей і стилю англомовної науково-технічної літератури, аналізуються **алгоритм** навчального **реферування** та **анотування; типи термінів** та способи їх перекладу; надаються поради щодо відтворення "псевдодрузів перекладача", **список найуживаніших скорочень**, що зустрічаються у науково-технічних текстах, формулюються **основні правила повного письмового перекладу;** приділяється увага техніці роботи зі словником.

Частина І складається із **одинадцяти уроків, об'єднаних у тематичні блоки.**

Пріоритет та домінування **комунікативного підходу** в навчанні видів іншомовної мовленнєвої діяльності вимагало побудови більшості вправ таким чином, щоб вони максимально повно моделювали реальні умови та особливості іншомовної мовленнєвої комунікації. Тому ми послідовно і цілеспрямовано підбирали вправи не тільки характерні для традиційної методики та апробовані протягом довгого часу, але і **вправи, які створюють навичковий фундамент для формування мовленнєвих умінь.** Опора на розвиток **внутрішньої мотивації студента** у навчанні спонукала авторів посібника до використання вправ, виконання яких викликало би у студентів почуття задоволення і розвивало впевненість у своїх силах, надавало максимальної можливості для самовираження засобами іноземної мови.

У перших трьох уроках коригуються та далі розвиваються знання та навички першокурсників з фонетики, техніки читання, ревізується та активізується їх словниковий запас та актуалізуються найпоширеніші граматичні явища, звертається значна увага на розвиток навичок аудіювання та усного діалогічного мовлення на побутову тематику: персональна ідентифікація, встановлення та розвиток вербальних контактів, ведення розмов на побутову тематику, повсякденне життя і навчання студента.

Позитивним є те, що до діалогів пропонуються **аудіозаписи, зроблені носіями англійської мови**, що дозволяє студентам вдосконалювати свою вимову.

Слід зазначити, що вже із перших уроків розпочинається знайомство студентів із **терміносистемою напряму «Будівництво»**. Їм пропонуються оригінальні тексти: From the History of Building; Construction Industry; Housing; Brick; The Engineer and Construction Industry. Тематика текстів свідчить про те, що вже на першому етапі навчання студенти починають знайомитися із своїм фахом за допомогою англомовного текстового матеріалу. Щоб полегшити цей процес, ми розробили наступну **структуру уроку**: зняття граматичних труднощів, введення та закріплення лексичного матеріалу. Після читання тексту студенти виконують ряд репродуктивних вправ, спрямованих на закріплення термінів, та вправ на уточнення розуміння тексту.

Наступна група вправ спрямована на розвиток фахового монологічного та діалогічного мовлення. Студентам пропонують виконати ряд вправ на основі прочитаного тексту: дати відповіді на поставлені питання, самим ставити питання англійською мовою, розширити тезу, скласти план для переказу, виписати ключові слова, переказати текст згідно з планом.

Структура та зміст наступних уроків спрямований на опанування більш високим рівнем мовних знань та **професійної комунікативної компетенції**.

У **граматичній частині** звертається увага на явища та конструкції, поширені в науковому функціональному стилі, такі як:

– пасивний стан дієслів;

– неособові форми дієслова (інфінітив, герундій, дієприкметник) та конструкції з ними;

– іменникові словосполучення (ланцюжок лівих означень) тощо.

Основний та додатковий тексти уроків сприяють подальшому поглибленню професійної компетенції студентів у будівельній сфері (Types of Buildings; Bearing Wall and Skeleton Frame; The Most Important Building Materials; How Materials Influence the Schools of Architecture; Silicate Industry; Concrete; Prestressed Concrete; Modern Urban Planning; Types of Modern Cities). Акцент зроблено на **забезпечення оптимального функціонування понять даних термінологічних систем, яке набуває великого значення в сучасних умовах широкого міжнародного співробітництва**. Доцільно зазначити, що до посібника додаються **аудіозаписи текстів А** і **В усіх 11-ти уроків першої частини**. Робота над цими професійно орієнтованими текстами включає **рецептивні види мовленнєвої діяльності – аудіювання і читання**. **Післятекстові вправи** акцентують увагу студентів на терміносистемі їх фаху, а також навчають їх узагальнювати інформацію текстів А і В та передавати її у формі **анотації** чи **реферату** (розвиток навичок письма) або презентувати її усно (розвиток навичок монологічного та діалогічного мовлення).

До навчального посібника включено вправи, які мають на меті засвоєння лексичного матеріалу як із розмовних, так і з фахових тем, розрахованих на володіння рівнем В2 згідно із **Загальноєвропейськими Рекомендаціями з мовної підготовки**.

Завдання, пов'язані з роботою над текстами, спрямовані на виявлення здібності до когнітивної діяльності, вони мають на меті визначення **соціокультурної компетенції** студентів, яка включає вміння враховувати культурні реалії країн, мова яких вивчається, **правила вербальної та невербальної поведінки** в типових ситуаціях спілкування, **шукати способи включення їх в активний діалог культур**.

Передтекстові як і післятекстові креативні завдання максимально активізують студентів, сприяють творчому підходу до роботи, розвивають **вміння та навички стратегій самостійного вивчення іноземної мови,** розкривають потенціал студента, надають можливість самоконтролю, мотивують студентів до самостійного пошуку **(дискусії, презентації, "мозкові штурми", проектна робота, креативне письмо, пошуки матеріалів в інтернеті).** При розміщенні вправ дотримано дидактичного принципу поступового зростання труднощів як лексичних, так і

граматичних, забезпечено достатню повторюваність лексики.

Перша частина посібника закінчується **англо-українським словником та глосарієм** найбільш вживаних термінів вищезазначених спеціальностей. Тезаурус (перелік термінів та термінологічних скорочень) і дефініції базуються на автентичних англомовних джерелах – монографіях, підручниках, навчальних посібниках, словниках, наукових та реферативних статтях. Саме цей матеріал є достовірним джерелом для селекції вузькогалузевої термінології і подає її найбільш повно у кількісному відношенні.

Друга частина посібника містить **12 професійно орієнтованих текстів для автономного навчання** і розвитку комунікативних компетенцій.

Різноманітний за видами мовленнєвої діяльності посібник містить **тематичні тестові завдання** для підсумкового контролю навчальних досягнень студентів та самостійної роботи, в яких ефективними методами перевіряється рівень сформованості іншомовної комунікативної компетенції. За своєю суттю тести є **тестами лексико-семантичної та граматичної компетенції.**

Наведено **ключі** до тестових завдань, які допоможуть перевірити правильність виконання тестів та звернути увагу на навчальний матеріал, що потребує доопрацювання. Це буде сприяти формуванню **стратегічної компетенції** студентів, яка передбачає уміння самостійно здобувати, використовувати та оцінювати свої знання.

Додаток містить матеріали, які становлять пізнавальний, емоційний та професійний інтерес для студентів. Він **нараховує 9 позицій:**

1. Ситуативні матеріали із навчального та професійного середовища студентів для розвитку комунікативних та соціокультурних компетенцій.
2. Careers related to construction industry.
3. Таблиця відтворення українського алфавіту англійськими літерами.
4. Список слів щоденного вжитку та їх значення в науково-технічних текстах.
5. Список слів, близьких за звучанням, але різних за значенням (омонімів).
6. Правила читання звичайних та десяткових дробів.

7. Найбільш вживані складні прийменники.
8. Mathematics related to construction industry.
9. Irregular verbs.

Авторський колектив висловлює щиру подяку рецензентам за їх поради і рекомендації, а також викладачам та аспірантам профілюючих кафедр НУВГП, чиєю допомогою ми послуговувалися при створенні посібника.

Бажаємо успіхів усім користувачам навчального посібника у вивченні **англійської мови для професійного спілкування**! Сподіваємося, що наш посібник Вам у цьому допоможе!

Автори

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Part I

Part II

ВСТУП. ОСНОВИ НАУКОВО-ТЕХНІЧНОГО ПЕРЕКЛАДУ

І. Технічний переклад і обмін науково-технічною інформацією

І.1. Три потоки науково-технічної інформації і стиль науково-технічної літератури

Все те, що можна побачити, прочитати і почути, прийнято називати інформацією. Чисельність знань породила великий потік інформації. І якщо обсяг знань збільшується вдвічі кожні 50 років, то обсяг інформації – кожні 10 років.

У світі видається 60 мовами більш ніж 100 тисяч науково-технічних журналів, в яких щорічно друкується приблизно 5 млн. статей. Наука не стоїть на місці. Відбувається інтернаціоналізація науки, змінюються міжнародні зв'язки. На державній основі виникає пожвавлений обмін науково-технічною інформацією. Зростає необхідність в перекладі науково-технічної літератури. Ось чому ми відчуваємо велику потребу у фахівцях, які володіють іноземними мовами.

Знання іноземних мов для інженерів, науковців, усіх фахівців стало нагальною вимогою часу, коли наука – це невід'ємний атрибут суспільства, а прискорення науково-технічного прогресу є основним питанням економічної стратегії.

Технічний переклад – це посередник, який використовується для обміну науково-технічною інформацією між людьми, які розмовляють різними мовами.

Науково-технічну інформацію умовно можна поділити на **три потоки**: 1) **патентна література**, яка є основною формою обміну, тому що все нове у галузі науки і техніки офіційно оформлюється у вигляді патенту; 2) **періодика**, спеціально передбачена для обміну науково-технічною інформацією: галузеві бюлетені, які вміщують реферати, анотації і назви; галузеві науково-технічні журнали, збірники та статті, бібліографічні показники із назвами тем, винаходів і предметів промислової продукції; 3) **спеціальні журнали і книжки, монографії,** рекламні матеріали, інструкції та інші джерела спеціальної інформації.

Мова науково-технічної літератури має свої особливості: граматичні, лексичні, фразеологічні, скорочення.

Як відомо, **стиль науково-технічної літератури** значно відрізняється від стилю художньої та політичної літератури. До

особливостей англійської науково-технічної літератури відноситься яскраво визначений **номінативний характер**, прагнення до точності, повноти і в той же час **компресії** мови. Технічній літературі властиві короткі, але всебічні пояснення різноманітних явищ і процесів. Саме тому значну частину її обсягу становлять **атрибутивні** конструкції. Для науково-технічної літератури характерне також вживання інфінітивних, герундіальних, прикметникових зворотів, скорочень, умовних позначень, велика насиченість термінами.

І.2. Термін і термінологія

Термін – це емоційно-нейтральне слово чи стале словосполучення, яке має точно визначене поняття з певної галузі науки і техніки. Специфіка термінів у тому, що вони однозначні у межах тієї термінологічної системи, в якій вживаються. Для них характерна **стилістична нейтральність**. Терміни є **загальнонаукові** і **галузеві**. Загальнонаукові терміни поширені в усіх галузях наукових знань (напр. класифікація, аналіз, об'єкт), а галузеві – відомі тільки в певній науковій галузі (напр. дамба, дренаж, гідротехніка). Бувають випадки, коли один і той же термін входить до різних термінологічних систем: (напр. атом, реакція, асиміляція). За своєю **будовою** терміни бувають **прості**, **складні** і **терміни-словосполучення**, які складаються з двох, трьох і більше слів.

Термін може бути утвореним на основі рідної мови або запозиченим як **із нейтрального термінологічного банку** (міжнародні греко-латинські терміноелементи), так і із іншої мови.

Усі терміни по своїй **будові** поділяються на:

1. **Прості**, які складаються із одного слова: *circuit* – ланцюг;

2. **Складні**, які складаються з двох слів і пишуться разом або через дефіс: *flywheel* – маховик;

3. **Терміни-словосполучення**, які складаються із декількох компонентів: *circuit breaker* – автоматичний вимикач.

Найбільші труднощі при перекладі викликають саме терміни-словосполучення. Терміни-словосполучення або **багатокомпонентні терміни** можуть бути:

а) словосполучення, коли змістовий зв'язок між компонентами виражений приєднуванням.

load governor – регулятор потужності;

brake landing – посадка з гальмуванням.

б) словосполучення, компоненти яких граматично оформлені за допомогою прийменника або наявністю закінчень.

rate of exchange – валютний курс;

braking with rocket – гальмування за допомогою ракетного двигуна.

В змістовому відношенні терміни-словосполучення є цілісними лексичними одиницями.

І.3. Три типи термінів

Типи термінів-словосполучень.

Терміни-словосполучення поділяються на **3 типи**.

1. До **першого типу** належать терміни-словосполучення, компонентами яких є самостійні слова, які можуть вживатися окремо і які зберігають своє значення:

brake – гальмо;

gear – механізм, прилад, шестерня і ін.

Але терміни-словосполучення, які складаються із таких компонентів, набувають нового значення і мають свою змістову самостійність, наприклад:

brake gear – гальмове обладнання;

electric motor – двигун, який приводиться в дію електрикою;

ionic rectifier – іонний очисник (випрямляч).

Характерним для термінів-словосполучень першого типу є можливість їх розчленування і виділення компонентів із словосполучень в самостійні терміни.

2. До **другого типу** відносяться такі терміни-словосполучення, які мають один із компонентів **технічний термін**, а другий – **загальновживаної лексики**. Компонентами такого типу можуть бути два іменники, або іменник і прикметник. Цей спосіб утворення науково-технічних термінів більш продуктивний, ніж перший, де два компоненти є самостійними термінами:

back coupling – зворотній зв'язок;

variable capacitor – перемінний конденсатор.

Перший компонент, як видно із прикладів, вживається в основному значенні.

Другий компонент може бути терміном, який вживається в

декількох галузях науки:

safety switch – аварійний вимикач (елек.);

locked switch – закрита стрілка (зал.);

change-over switch – перемикач (елек.);

change-tune switch – ручка настройки (рад.).

До другого типу відносяться також такі терміни-словосполучення, другий компонент яких вживається в основному значенні, а в сполученні з першим компонентом він є самостійним терміном, спеціальним для певної галузі техніки:

electric eye – фотоелемент;

atmospheric disturbances – атмосферні перешкоди.

Характерною властивістю термінів-словосполучень другого типу є те, що другий компонент, тобто іменник, може приймати на себе значення всього сполучення і. представляти в контексті самостійний термін.

current замість *electric current;*

change замість *electric change.*

3. До **третього типу** відносяться **терміни-словосполучення**, обидва компоненти яких являють собою слова загальновживаної лексики і тільки сполучення цих слів є терміном.

Терміни третього типу термінологічно не розкладаються і зв'язок між компонентами тісний:

line wire – провід під напругою (ел.);

live stream – свіжий пар (теп.).

Компоненти термінів-словосполучень третього типу можуть вживатися як звичайне сполучення прикметника з іменником, тобто в прямому значенні:

thermal stress – термічна напруга;

progressive illumination – послідовне освітлення.

Терміни об'єднуються в **термінологічні системи**, які виражають поняття однієї галузі знань.

У кожній термінологічній системі утворюються певні групи, для яких загальним є їх належність до класу предметів, або до класу процесів, властивостей і т.д.

Основна кількість термінів утворилась за рахунок загальновживаних слів, взаємного проникнення із різних галузей техніки, запозичень із міжнародної лексики за словотворними моделями, які характерні для сучасної англійської мови.

Найбільшу складність для перекладу являють собою терміни-неологізми та технічна фразеологія. Вони, як правило, не відображені у словниках, наприклад, *electric eye* – фотоелемент.

Характерною рисою сучасної науково-технічної літератури є широке використання **скорочень** та **абревіатур**. Прийняті скорочення є офіційними, загальноприйнятими і їх не можна довільно змінювати та замінювати. Наприклад, А.С. – *atternating current*, Н.Р. – *horse power*.

І.4. Типи скорочень в англійській мові

В англійській технічній мові можна виділити такі типи скорочень.

Буквенні скорочення

а) Скорочене слово – його перша буква, а скорочене словосполучення – перші букви компонентів. Скорочені слова вимовляються повністю:

E – east – Схід;

N – north – Північ;

AA – Automatic Answer – автоматична відповідь;

BD – Business Data – комерційна інформація.

б) У ряді випадків буквеному скороченню підпадає тільки перший елемент, який вимовляється як алфавітна назва даної букви:

H-bomb = Hydrogen bomb – воднева бомба;

A-fission = Atom fission – розщеплення атому.

Внаслідок широкого вживання скорочень існує багато омонімічних форм (омоніми – слова, що вимовляються однаково, але мають різні значення), що спричиняє труднощі при виборі потрібного значення:

S.F. = Self feeding – автоматична подача;

S.F. = signal frequency – частота сигналу;

S.F. = square foot – квадратний фут.

Складові скорочення

а) Складові скорочення являють собою початкові склади компонентів словосполучень. Вони пишуться разом і читаються як одне слово:

Maxcap = maximum capacity – максимальна потужність;

Radstat = radio station – радіостанція;

Intercom = *intercommunication* – двосторонній зв'язок;

Modem = *modulating* – *demodulating* – модем.

б) Скорочення, які складаються із букв або складів:

PPent. = *Pentagon* – будинок Міністерства оборони США;

UNO – *United National Organization* – Організація Об'єднаних Націй.

Усічені (скорочені) слова

а) Скорочення слова, при якому залишається початкова частина слова:

sub (submarine) – підводна лодка;

sub (subirrigation) – підґрунтове зрошення.

б) Скорочення слова, при якому залишається кінцева частина слова:

Chute (parachute) – парашут;

Phone (telephone) – телефон.

в) Скорочення слова, при якому відпадає середня частина слова:

RY (railway) – залізниця.

г) Скорочення слова, при якому залишаються два склади:

ammo (ammunition) – боєприпаси;

memo (memorandum) – меморандум.

Список найуживаніших скорочень

Скорочення, що трапляються в текстах різної тематики.

№ з/п	Скорочення	Повне написання	Переклад
1.	A.D. *лат.*	anno dominiante	нашої ери
2.	a. m. *лат.*	ante meridian	до полудня
3.	B.C. *лат.*	before christ	до нашої ери
4.	c. f. *лат.*	confer	порівняй
5.	e.g. *лат.*	exampli gratia	наприклад
6.	Etc.	et cetera	тощо
7.	ft	foot	фут
8.	gr.	gram	грам
9.	i.e. *лат.*	idest	тобто
10.	in	inch	дюйм
11.	kg.	kilogram	кілограм
12.	km.	kilometre	кілометр
13.	lb. *лат.*	libra	фунт

14.	m	metre	метр
15.	mi	mile	миля
16.	mm.	millimetre	міліметр
17.	№	number	номер
18.	p.m. *лат.*	post meridian	після полудня
19.	sec.	second	секунда
20.	Viz. *лат.*	videlicet	а саме; тобто

Скорочення, що трапляються в науково-технічних текстах.

№ з/п	Скорочення	Повне написання	Переклад
1.	a. c.	alternating current	зміний струм
2.	a. f.	audio frequency	звукова частота
3.	amp.	ampere	ампер
4.	at. wt. wt.	atomic weight	атомна вага
5.	b.p.	boiling point	точка кипіння
6.	C.	centigrade	за стоградусною (шкалою Цельсія)
7.	Cal	calorie	калорія
8.	c c.	cubic centimetre	кубічний сантиметр
9.	cwt	hundredweight	центнер (в Англії = 50,8 кг, у США – 45,4 кг)
10.	d. c.	direct current	постійний струм
11.	E. M. F.	electromotive force	електрорушійна сила
12.	F.	frequency	частота
13.	fig.	figure	рисунок, креслення
14.	f.p.m.	feet per minute	футів за хвилину
15.	H. P.	horse power	кінська сила
16.	I H P.	indicated horse power	індикаторна кінська сила
17.	L	Litre	літр
18.	M	metal	метал
19.	MM	minor metals	другорядні метали
20.	mol. w t.	molecular weight	молекулярна вага
21.	m. p.	melting point	точка плавлення
22.	N	normal	нормальний
23.	o. d.	outer diametre	зовнішній діаметр
24.	oz.	ounce	унція

№ з/п	Скорочення	Повне написання	Переклад
25.	pres.	pressure	тиск
26.	psi	pounds per square inch	фунтів на квадратний дюйм
27.	RF	radio frequency	радіочастота
28.	RPM	revolutions per minute	обертів за хвилину
29.	sp. gr	specific gravity	питома вага
30.	sq.	square	квадратний
31.	temp.	temperature	температура

В залежності від практичної цінності матеріали, які поступають до нас в процесі обміну, обробляються по-різному. **Технічний переклад** охоплює декілька форм і способів обробки оригіналу перекладачем. Таких цілком визначених видів технічного перекладу нараховують вісім, кожен із яких має свої особливості і закономірності.

ІІ. Види технічного перекладу

ІІ.1. Правила повного письмового перекладу. Буквальний та адекватний переклад

Практично вся інформація обробляється у формі **повного письмового перекладу**, який є основною формою технічного перекладу. Всі інші форми технічного перекладу являють собою лише скорочені варіанти цієї основної форми.

Відмітимо основні правила повного письмового перекладу.

- ✓ Прочитати текст, якщо необхідно, вивчити відповідні пояснювальні джерела інформації .
- ✓ Виділити певну закінчену за змістом частину тексту.
- ✓ Перекласти цю частину.
- ✓ Порівняти перекладену частину з оригіналом для поповнення пропущеного.
- ✓ Так само перекласти решту тексту.
- ✓ Відредагувати переклад.
- ✓ Перекласти заголовок. **Заголовок** спеціальної літератури повинен відображати суть змісту, по можливості відображати те, що **є новим**.

У цілому, переклад є вираження того, що було виражено в одній мові, засобами іншої. Із визначення перекладу випливає, що

неперекладених текстів немає і що перекладаються не слова, а те, що виражено ними. Необхідно розрізняти переклад **буквальний і адекватний**. При буквальному перекладі залишають граматичні конструкції і порядок слів оригіналу, чужі рідній мові. З точки зору початківця буквальний переклад можна розглядати як початковий етап для досягнення адекватного перекладу.

I have a headache. В мене болить голова. – букв. Я маю слабу голову. – невірний переклад.

I'll give you a piece of advice. Я тобі пораджу. – букв. Я дам тобі кусок поради. – невірний.

He used to do it by himself. Він завжди робить це сам. – букв. Він використовував робити це з власною допомогою. – невірний переклад.

He will do his best. Він зробить все можливе. – букв. Він буде робити своє найкраще. – невірний переклад.

У буквальному перекладі завжди недоцільно різні засоби мовного вираження і спотворюється зміст оригіналу.

Досвідчений перекладач звичайно не має потреби у буквальному перекладі, тому що він розуміє зміст оригіналу і без перекладу. Основні труднощі, з якими зустрічається перекладач, полягають в підборі найбільш точного літературного варіанту перекладу. Навпаки, початківець нерідко усвідомлює точний зміст іншомовного речення тільки після його дослівного перекладу на рідну мову. Ось чому дослівний переклад припустимий як попередній щабель для усвідомлення змісту іншомовного речення, але ні в якому разі як остаточний варіант перекладу. Ним може бути тільки ретельно відредагований у відповідності до норм рідної мови адекватний переклад. **Адекватним** вважається переклад, який точно передає думки автора з усіма їх відтінками, на високому мовному рівні з використанням відповідної термінології і збереженням стилю. Лексико-стилістичне звучання повинно бути природним з точки зору норми української мови. Для адекватного перекладу науково-технічних текстів, крім того, характерні лаконічність, гранична ясність, які досягаються не тільки використанням загальноприйнятої термінології, але також і використанням недвозначних граматичних конструкцій. Якщо серед термінів існують (зустрічаються) синоніми, необхідно відібрати лише ті, які мають найбільш точно окреслений обсяг

значень. Під час перекладу тексту, статті чи книжки необхідно вживати завжди одні й ті самі терміни для позначення одних і тих самих предметів, дій і явищ. Всі **стрижневі терміни** потрібно виписувати в словник в міру того, як вони зустрічаються у тексті разом із українськими еквівалентами і користуватись цим вокабуляром на протязі всього процесу перекладу. Виписування взагалі дуже ефективне для запам'ятовування слів, тому що чим більше аналізаторів залучається у процес сприйняття, тим триваліше запам'ятовування. У процесі виписування приймають участь не тільки зоровий, але й слуховий і м'язовий аналізатори, тобто ви внутрішньо чуєте і ніби відчуваєте виписане вами слово.

Необхідною умовою досягнення точності перекладу є **добре знання предмету**, що трактується в оригіналі. Якщо доводиться робити вибір між двома перекладачами, один з яких досконало знає предмет, але гірше мову, а другий слабше знає предмет, але дуже добре володіє мовою оригіналу, то вибирають, зазвичай, першого кандидата: словники не заміняють ґрунтовного знання предмету.

II.2. Робочі джерела інформації. Словники і довідкова література

Для того, щоб легко і швидко знайти необхідний відповідник вихідній одиниці оригіналу, необхідно вміло користуватися **робочими джерелами інформації**, які поділяються на **словники загального призначення** і **загальні енциклопедії. Словники**, у свою чергу, поділяються на двомовні, одномовні (тлумачні), словники іншомовних слів і т.і. **Спеціальні** джерела інформації включають в себе спеціальні словники, спеціальні енциклопедії, довідники з різних галузей науки і техніки. **Спеціальні** словники можна поділити на двомовні, до яких входять політехнічні двомовні словники, галузеві словники і допоміжні двомовні словники (напр. словник скорочень), а також одномовні спеціальні словники (напр. «Скорочений політехнічний словник»). Для успішного користування **загальними двомовними словниками** необхідно запам'ятати наступне:

а) загальні двомовні словники дають не переклад слів, а тільки можливі еквіваленти кожного слова і, як правило, далеко не всі. Ось чому так необхідно враховувати роль **контексту** при перекладі;

б) щоб швидко знаходити необхідне **слово**, потрібно добре знати

алфавіт. Це дає значну економію робочого часу. (DILOSE – штучне слово, утворене перекладачами, вказує що слова на початку II чверті словника починається з DI, на початку III із сполучення LO, а на початку останньої – із SE;

в) необхідно добре знати зміст всіх умовних позначок, скорочень, розділові знаки, які використовуються у словнику. Для цього, перш ніж користуватися словником, необхідно уважно прочитати вступ, де йдеться про користування ним, а також ознайомитись із списком скорочень.

Прикладом **загального двомовного словника є** "Англо-український словник" М.І.Балла.

Усі заголовні англійські слова розміщені у словнику в **алфавітному порядку**. Наводяться найуживаніші значення англійських слів. Слова близькі за значенням (синоніми) розділяються комами, слова, що мають різні значення – крапкою з комою.

Термінологічні позначки, наприклад:

boarding – (мор.) взяття на абордаж,

dandelion – (бот.) кульбаба,

filar – (mex.) нитковий,

hardener – (хім.) прискорювач затвердіння, і умовні скорочення, що вказують на стиль та сферу вживання слів, наприклад:

jollification – (розм.) розвага; утіха,

landocracy – (ірон.) земельна аристократія,

lead – (амер.) вступна частина, подаються курсивом перед перекладом.

Якщо заголовне слово повторюється у сполученні, вони замінюється знаком **~** (тильда). **Тильда** (~) служить у гніздах слів знаком повтору. Вона замінює або все заголовне слово або його складову частину.

effort зусилля; **without** ~ легко; **a good** ~ вдала спроба.

Словосполучення, що позначають окремі поняття, **усталені сполучення слів, фразеологічні звороти**, наводяться після знака ◊ (**ромб**).

◊ the jolly god – Бахус

◊ at liberty – вільний

◊ to try one's luck – спробувати щастя.

Сполучення дієслова з прийменниками і прислівниками

позначаються знаком □ (квадрат).

□ crowd into – протискатися

□ crowd out – витискати

□ kick about – перекидати.

Слова в словнику завжди подаються в початковій (**вихідній**) формі: іменник – в однині, прикметник – в звичайному ступені порівняння; дієслово – в трьох формах (інфінітив (вихідна форма дієслова) *Past Indefinite, Past Participle).*

Загальні одномовні словники

Одномовні словники пояснюють значення слів тією ж мовою.

Словники синонімів не тільки пояснюють значення слів схожих за смислом, а також надають набори лексичних засобів для більш точного вираження думки.

Словники антонімів також пояснюють значення слів, але методом "від протилежного" і дають можливість вибору протилежних за смислом слів і виразів.

Спеціальні політехнічні двомовні словники

Ці словники дають еквіваленти загальнотехнічних і загальнонаукових термінів, а також загальновживаних слів. У цьому словнику розміщення матеріалу **алфавітно-гніздове**, тобто, якщо термін складається з одного слова, то це слово потрібно шукати як у звичайному словнику, по алфавіту. Але, якщо термін складається з декількох слів, одне із яких є означувальне слово, а інші – означення, то такий термін потрібно шукати **за означувальним словом.** Таке слово стоїть в кінці термінологічного сполучення. Наприклад:

control device – контрольний пристрій;

gravity dam – гравітаційна гребля.

Якщо слово входить не в одне термінологічне сполучення, то такі сполучення утворюють гнізда, в яких вони (слова) розміщуються у вигляді списку, трохи зміщеного праворуч від основного слова. Термінологічні сполучення у цьому гнізді розміщуються за алфавітом, сам основний термін у гнізді замінюється тильдою (~).

coding 1. кодування; 2. програмування

automatic ~ 1. автоматичне кодування; 2. автоматичне програмування;

direct ~ програмування в абсолютних адресах;
optimal ~ 1. оптимальне кодування; 2. оптимальне програмування.

В кінці словника подається список найбільш вживаних спеціальних **скорочень** і **позначок**, прийнятих в різних галузях науки і техніки. Словник, як правило, забезпечується **додатком**, в якому можна знайти дуже корисні відомості, напр., як позначають в англійській і американській технічній літературі фути, дюйми, десяткові дроби і т.п.; різні математичні позначки, знаки, скорочення, грецький алфавіт, римську нумерацію і т.і. Крім того, у додатку є **таблиці** для трансформування різних англійських і американських мір у десяткові. У випадку, коли зустрічається слово чи вираз у латинському написанні, які явно не входять у словниковий склад мови оригіналу, напр. ex cathedra (авторитетно), ex contrario (напроти), необхідно продивитись список іншомовних слів і виразів у латинському написанні «**Словника іншомовних слів**».

Двомовні спеціальні словники

Галузеві словники відрізняються від політехнічних тим, що вони містять значно більше термінів і їх еквівалентів, які відносяться до даної галузі. І це природньо, тому що політехнічний словник не може вміщувати спеціальної термінології усіх галузей.

Крім вузькоспеціальних термінів, галузеві словники також вміщують загально-технічну лексику.

Розміщення термінів і сполучень може бути алфавітним, гніздовим і змішаним.

Одномовні спеціальні словники

Прикладом одномовного словника може бути Політехнічний тлумачний словник. У цьому словнику пояснюються спеціальні терміни, даються відомості про різні виробничі процеси, описуються різні пристрої і т.д.

Довідники

Довідники призначені для спеціалістів різних галузей техніки і промисловості і містять техніко-економічні показники, цифрові дані і т.д.

В спеціальному довіднику можна знайти все, що потрібно для правильного розуміння оригіналу.

В довідниках інколи подаються списки спеціальної літератури з окремих питань.

Порядок класифікації словників, за якими бажано використовувати джерела інформації для економії часу наступний:

Загальні джерела інформації.

1.	Словники загального призначення	
	Двомовні	Англо-українські і українсько-англійські неспеціальні словники
		Фразеологічні словники
	Одномовні	Тлумачні словники (тлумачний словник української мови, тлумачний словник англійської мови)
		Допоміжні словники (словники синонімів, словники, антонімів, орфографічні словники)
		Енциклопедичні словники загального призначення
2.	Загальні енциклопедії	

Спеціальні джерела інформації.

1.	Спеціальні словники		
	Двомовні	Політехнічні словники	
		Галузеві словники	
		Допоміжні словники (наприклад, словники скорочень)	
	Одномовні	Політехнічний словник	
2.	Спеціальні енциклопедії		
	Політехнічні енциклопедії		Галузеві енциклопедії
3.	Довідники		
4.	Спеціальна література.		

ІІ.3. Основні способи і прийоми досягнення адекватності

Адекватний переклад здійснюють за допомогою різних способів і прийомів. Головним способом перекладу термінів є переклад за допомогою **лексичного еквіваленту**, який є опорним пунктом у тексті. **Еквівалентом** називають постійну і рівнозначну відповідність значень двох різних мов, яка не залежить від контексту. Під **контекстом** розуміють лінгвістичне оточення певної мовної одиниці, відрізок тексту із закінченою думкою, який дає змогу точно встановити значення окремого слова чи виразу, що входить до його складу. До них можна віднести, головним чином, власні імена, деякі конкретні поняття і терміни. Ці слова запозичені, в основному, з **латинської та грецької мов** поширились і стали **інтернаціональними**. Вони мають структурно-семантичну спільність у багатьох мовах: *film, text, visit, radio, doctor, document, catastrophe, element, classification, integral.* В умовах швидкого розвитку науки і техніки безперервно утворюються загально спеціальні і вузькоспеціальні терміни, які поповнюють словниковий склад мови. Усі ці слова, які входять у **міжнародний фонд наукової термінології** і здатність їх розуміти і без словника, дуже полегшує читання і переклад. Однак, при перекладі вихідних одиниць оригіналу засобами рідної мови, частіше доводиться користуватись не еквівалентами, а **аналогами** (або частковими еквівалентами). **Аналогом** називають одне із багатьох словникових відповідників, вибір якого визначається контекстом, напр. *nucleus* – ядро, центр; *circuit* – контур, схема, коло; *engine* – машина, двигун, поїзд; *switch* – вимикач, комутатор; *root* – корінь, хвіст (лопасті турбіни). Неабиякі труднощі викликають так звані **"хибні" друзі перекладача**. Це слова, які за звуковим оформленням нагадують українське слово, але їх значення різні: *magazine* [mægƏ'zi:n] – журнал (а не магазин); *spequlate* ['spekjuleit] – роздумувати (а не спекулювати) тощо. Інтернаціональна лексика дуже поширена в англійській та українській мовах і її переклад має свої особливості і викликає певні труднощі. Необхідно враховувати таку специфіку та уникати помилок при перекладі.

Список слів, близьких за формою до українських слів, але різних за значенням.

1.	accurate	точний (не акуратний)
2.	ammonia	аміак (не амоній)
3.	ammunition	боєприпаси (не амуніція)
4.	artist	художник (не артист)
5.	billet	приміщення для постою (не білет)
6.	brilliant	блискучий (рідко брильянт)
7.	camera	фотоапарат (рідко камера)
8.	cartoon	карикатура, мультфільм (не картон)
9.	clay	глина (не клей)
10.	compositor	складач (не композитор)
11.	concession	поступка (рідко концесія)
12.	conductor	провідник, провід (рідко кондуктор)
13.	contribution	внесок (рідко контрибуція)
14.	control	управління, модуляція (рідко контроль)
15.	data	дані (не дата!)
16.	decade	десятиліття (не декада)
17.	decoration	орден, прикраса (не декорація)
18.	delicate	ніжний, тонкий (про механізм) (рідко делікатний)
19.	Dutch	голландський (не датський)
20.	engineer	машиніст (також, інженер)
21.	fabric	фабрикат, виріб, структура (не фабрика)
22.	figure	малюнок; цифра (рідко фігура)
23.	gallant	хоробрий, доблесний (рідко галантний)
24.	genial	добрий (не геніальний)
25.	honorary	почесний (не гонорар)
26.	instruments	вимірювальні прилади (рідко інструменти)
27.	intelligence	розум, інтелект, розвідка (не інтелігенція)
28.	list	список (не лист)
29.	magazine	журнал (не магазин)
30.	mark	пляма; мітка (не марка)
31.	matrass	колба (не матрац)
32.	mayor	мер міста (не майор)
33.	momentum	інерція; поштовх (не момент)
34.	null	недійсний; неіснуючий (не нуль)
35.	number	число, кількість (рідко, номер)

36.	officer	чиновник (також офіцер)
37.	original	справжній, аутентичний (рідко оригінальний)
38.	partisan	прихильник (рідко партизан)
39.	personnel	персонал, особовий склад (не персональний)
40.	phenomenon	явище (рідко феномен)
41.	prospect	перспектива (не проспект)
42.	(to) pretend	прикидатися, робити вигляд (рідко претендувати)
43.	principal	головний, основний (не принциповий)
44.	production	виробництво (рідко продукція)
45.	professor	викладач (також: професор)
46.	radio-set	радіоприймач (не радіомережа)
47.	(to) realize	зрозуміти, збагнути (рідко реалізувати)
48.	record	запис, звіт (також, рекорд)
49.	replica	точна копія (не репліка)
50.	satin	атлас (не сатин)
51.	scandal	плітки (рідко, скандал)
52.	sodium	натрій (не сода)
53.	solid	твердий, масивний (рідко солідний)
54.	spectre	дух, привид (не спектр)
55.	speculation	роздуми, припущення (рідко спекуляція)
56.	spirit	дух; настрій (не спирт)
57.	tax	податок (не такса)
58.	telegraphist	радист (не телеграфіст)
59.	(to) translate	перекладати (не транслювати)
60.	troop	загін, кавалерійський взвод (не труп і не трупа)

При перекладі бувають такі випадки, коли ні один із аналогів не охоплює повністю значення вихідного слова чи терміна у даному контексті. Тоді слід удатися до прийомів адекватної заміни.

II.4. Основні прийоми адекватної заміни

а) **описовий чи дескриптивний переклад** – передача слів оригіналу за допомогою роз'яснюючого інтерпретування. Напр. *energy factor* – коефіцієнт різкості настройки; *high-power station* – силова станція великої потужностів.

б) **прийом антонімічного перекладу**. Напр. Не *failed to make the experiment.* – Він не здійснив експерименту.

в) **прийом калькування** – переклад іншомовного слова чи словосполучення по частинах з подальшим їх складанням *sky-*

scraper – хмарочос, хмародряп, небосяг; від *sky* – небо, *scrape* – скребти; *long-noise engine* – мало шумний двигун; *rotary engine* – ротаційна машина.

г) **транскрипція і транслітерація**. **Транскрипція** – передача літерами рідної мови **звучання** іншомовного слова (часто використовують для відтворення назв фірм і корпорацій. Напр. *General Motors Corporation* –Дженерал моторз корпорейшн); *briefing* – брифінг; *designer* – дизайнер. **Транслітерація** – передає **літери** оригінального терміну (*buldozer* – бульдозер; *piggi*-back – пігібак – перевезення автофургонів на залізничній платформі; *absorption* – абсорбція – поглинання). Слід відзначити, що цей шлях хоч і самий легкий, далеко не завжди найкращий, тому що побудовані за таким способом терміни несуть мало інформації, часто вимагають додаткового роз'яснення, породжують плутанину, нерідко засмічують рідну мову.

Все сказане вище відноситься у рівній мірі і до інших видів перекладу, анотаційного і реферативного, які займають значне місце у перекладацькій практиці.

II.5. Анотування і реферування текстів; анотаційний та реферативний переклад

Перш ніж розпочати розмову про **реферативний** і **анотаційний** види перекладу, які широко застосовуються як в усному, так і у письмовому перекладі н/т літератури, слід сказати декілька слів про те, що являє собою **анотування** і **реферування** оригінальних текстів взагалі, наскільки обов'язкові ці види роботи для здійснення анотаційного і реферативного перекладів. Робота над текстами з метою їх подальшого реферування і анотування активізує процес навчання читанню, виробляє навички цілеспрямованої роботи із спеціальною літературою, є засобом навчання читанню і контролю за розумінням прочитаного. Як засіб навчання, реферування і анотування сприяють розвиткові **наступних вмінь** і **навичок**. Перш за все, вони є навчанням різних видів читання, тому що реферативному викладу передують такі етапи: а) встановлення інформативної цінності джерела; б) реферативний аналіз тексту, в основі якого лежать різні види читання. Все це дисциплінує тих, хто вивчає іноземну мову, привчає до самокорекції, вчить чітко викладати свої думки. Під час читання з настановою на

реферування і анотування виробляються навички самостійно проводити **лексико-граматичний аналіз тексту** і, спираючись на знання загально-технічного і спеціального матеріалу, переборювати мовні труднощі.

Однією із найбільш поширених вправ, націлених на осмислення змісту н/т і публіцистичних текстів, як перша сходинка при навчанні реферуванню і анотуванню н/т літератури, є **складання плану**. Пункти плану, які можуть бути сформульовані у вигляді **заголовків**, **тез** і **питань**, повинні стисло відображати основний зміст прочитаного, а в разі необхідності використовуватись для підготовки логічного висловлювання по тексту. Однак існує ще одна можливість використання плану прочитаного тексту – це складання **анотації**.

Перш ніж розпочати роботу з **анотування** текстів, слід ознайомитись з деякими мовними зразками, які широко використовуються при складанні анотацій. Це вирази типу: "автор описує", "крім того", "він зображує", "у статті розглядаються питання" і. т.п. Пункти плану можуть бути виражені у вигляді ключових речень, взятих із тексту. Така тезова форма окремих пунктів плану цілком прийнятна, тим більше, що ці речення точно передають зміст тексту, і можуть повністю використовуватись у тексті анотації. При складанні анотації за таким планом потрібні будуть наступні мовні зразки: *The subject of this text is ... ; The author describes ... ; The purpose of this article is ... ; It is pointed out that ... ; The author tells us about ...; The text also discusses ... ; The next part of the text is devoted to ... ; Further the author describes ...; The author pays special attention to … ; In my opinion; To my mind … ; As far as I know ... etc.*

У процесі виконання подібної роботи відбувається поступове оволодіння великою кількістю мовних зразків, якими можна вільно оперувати при складанні анотації. Така робота по складанню анотацій дуже корисна, тому що сприяє логічному осмисленню змісту і розвитку вмінь **зрілого читання іншомовної літератури за фахом**. Дуже близько до такого виду роботи стоїть також **анотаційний переклад** – вид технічного перекладу, зміст якого полягає у складанні анотації оригіналу на рідній мові. **Анотація** спеціальної статті чи книги – це **гранично стисла характеристика оригіналу**, яка викладає його зміст у вигляді переліку основних

питань та іноді дає **критичну оцінку.**

Така анотація повинна дати читачеві уявлення про **характер оригіналу** (наукова стаття, технічний опис), **будову** (які питання і в якій послідовності розглядаються, до яких **висновків** приходить автор), про **призначення** оригіналу (на кого розрахований), а також про **актуальність** та інші подібні моменти. Основна ознака анотації – це характеристика оригіналу. Обсяг анотаційного перекладу, в порівнянні з оригіналом, може змінюватись в залежності від умов, однак анотації обсягом більш, ніж **600 друкованих знаків** практично не робляться. При анотаційному перекладі відтворюється лише незначна частина інформації оригіналу, і та у формі характеристики, а не переказу. Найбільш характерними **засобами згорнення інформації** є **компресія** – передача тексту оригінала в більш короткому вигляді шляхом опущення надмірної інформації та **компенсація** – заміна авторських засобів вираження оригіналу короткими засобами вираження перекладача-референта. **Стиль анотаційного перекладу** відрізняється значною вільністю і визначається тільки метою перекладу – дати стислу характеристику оригіналу. **Анотація**, що підсумовує **тематичний зміст**, може бути **гранично стислою** і складатися із **одного-двох речень**. Високий ступінь узагальнення матеріалу в анотації неминуче приводить до суб'єктивного забарвлення формулювань. А це в свою чергу викликає необхідність введення у анотацію кліше і **спеціальної оцінної термінології**. (*The text deals with ... ; The article is devoted to ...; Disclosing the problem the author dwells on ...; The main gist is ...*).

При складанні **анотації** на статтю чи книгу на іноземній мові необхідно здійснити **наступні операції**:

а) виписати назву статті (книги), прізвище та ініціали автора на іноземній мові;

б) дати переклад назви статті чи книги: **заголовок** у короткій формі передає зміст тексту або визначає найважливіше в ньому;

в) дати вихідні дані журналу на іноземній мові, номер, рік видання, том, серію випуску, кількість сторінок статті, що анотується (від-до), кількість рисунків, таблиць, бібліографічних назв і т.п.;

г) дати дуже стислий виклад змісту статті, теми першоджерела, розкриття його заголовку.

Реферування, на відміну від анотації, являє собою

конспективний виклад **суттєвих положень** тексту оригіналу і його ідейного змісту, який супроводжується **оцінкою** і **висновками** референта. Діяльність по реферуванню має дві основні мети: **інформативну** та **навчальну**. В першому випадку його метою є замінити першоджерела і дати читачеві можливість зберегти час для ознайомлення з об'єктом опису. Навчальне реферування, яке є програмною вимогою, менш пов'язане з інформативними завданнями. При навчанні читанню у вузі реферат виступає як якийсь вторинний текст, тобто є однією із основних форм фіксування головного змісту оригіналу і розглядається як ефективний **засіб контролю за розумінням прочитаного** та здобуттям необхідної інформації. Основними вимогами до реферату (найбільш частотні англійські терміни **precis, abstract**) є наступні :

1) об'єктивний переказ оригінального матеріалу, тобто фіксування тільки тих відомостей, які містяться в оригіналі;

2) повний виклад, тобто фіксування всіх суттєвих положень оригіналу;

3) єдність стилю: використання тих же мовних засобів, єдиної термінології, скорочень і т.і.

Обсяг реферату, прийнятий в інформаційній службі – **2000 друкованих знаків**, незалежно від обсягу роботи.

Текст реферату складається із трьох частин: **вступної** (або вступу), де містяться вихідні дані; **описової**, яка включає основну ідею і **заключної**, яка містить основні висновки. Завершується реферат **коротким коментарем за схемою**: **актуальність** всього матеріалу; **на кого матеріал розрахований**; **ступінь прогресивності**; **яке коло читачів він може зацікавити**. Реферування тексту передбачає дві основні операції: **компресію**, тобто зменшення тексту в обсязі, і виключення **другорядних деталей**. Це більш важкий вид роботи, тому що у цьому випадку необхідно вирішити, що повинно бути скорочено у тексті, а що можна виключити. Процес реферування сприяє розвитку всіх видів пам'яті: **короткочасної**, яка проявляє себе при первинному ознайомленні з першоджерелом; **довгочасної**, яка зберігає на майбутнє найбільш цінну інформацію первісного документу; **оперативної**, направленої на запам'ятовування тексту на певний час, протягом якого здійснюється реферування. Реферування можливе тільки на основі детального і повного розуміння тексту.

Тому у навчальному процесі воно може бути використане **як засіб контролю за розумінням прочитаного**. Таким чином, грамотно складений реферат свідчить про вміння витягати із тексту **графічну** інформацію, пов'язану з оволодінням графічної системи мови; **структурну** інформацію; **семантичну** інформацію, тобто зміст тексту. Реферування може слугувати надійним засобом **читання "про себе"**, при якому не відбувається переключення із внутрішнього мовлення на зовнішнє тобто проговорювання вголос, як це спостерігаємо при переказі чи відповідях на запитання. Реферування тексту являє собою підготовку до реферативного перекладу. Реферат, як зазначалось вище, це стислий виклад суті якогось питання. Однак, засоби викладу суті питання можуть бути різними. В галузі **технічного перекладу** окреслились **три форми** складання реферату, яким відповідають три самостійних види технічного перекладу: а) **реферативний переклад**; б) переклад типу **"експрес-інформація"**; в) переклад **патентних рефератів**, які потребують особливого підходу, так як зберігають архаїчні форми, складні граматичні конструкції, характерні стереотипні фрази.

Їх своєрідність полягає в канонічній формі опису патентів та особливості двох стилів: науково-технічного і офіційного; тому їх переклад викликає певні труднощі.

Таким чином, **реферативний** переклад – це **повний письмовий переклад заздалегідь відібраних частин оригіналу, які складають зв'язний текст.** У процесі роботи над реферативним перекладом необхідно відкинути всю надмірну інформацію, кількість якої перш за все залежить від характеру оригіналу. **Алгоритм** роботи над реферативним перекладом наступний:

1. **Попереднє** знайомство з оригіналом, **ознайомлення** з даною галуззю та її **термінологією**, уважне читання тексту, **виділення ключових фрагментів, усунення зайвої інформації**.

2. **Розмітка тексту** для виключення його другорядних частин.

3. Читання залишених місць і **усунення можливих диспропорцій і незв'язностей**.

4. **Повний письмовий переклад частини оригіналу**, яка залишилась після обробки і являє собою зв'язний текст, побудований за таким же логічним планом, що й оригінал.

На відміну від реферативного перекладу, **переклад типу "експрес-інформація"** складають після вивчення оригіналу. При

такому перекладі пропонується викласти суть справи за власним планом, який може не збігатися з планом побудови оригінального тексту. Дозволяється дуже докладно передати якусь одну частину тексту і повністю виключити із перекладу іншу частину, менш важливу для розуміння суті справи. Висловлювати свої власні міркування чи давати якусь оцінку при цьому виді перекладу не дозволяється. **Стислість** і **об'єктивність** – це основні риси, які характерні для перекладу типу "експрес-інформація". Якщо в оригіналі є креслення, рисунки та інші ілюстровані матеріали, то перекладач вибирає **найбільш важливі і докладно пояснені у тексті ілюстрації і вказує місце в тексті свого перекладу, де повинна бути та чи інша копія ілюстрацій, наприклад, за допомогою прямокутника, в якому зазначені сторінка і номер рисунка.**

рис., стор. III, кресл. 5а

Крім вище зазначених видів перекладу, на практиці дуже часто звертаються до **консультативного** перекладу, який включає **усне анотування, усне реферування, вибірковий переклад із листа і усний переклад заголовків з метою пояснення окремих абзаців, речень, термінів.**

Всі ці види роботи направлені на те, щоб допомогти тим, хто вивчає іноземну мову, **самостійно** орієнтуватися в науково-технічній літературі за фахом, **набути відповідних навичок і вмінь**, необхідних для більш зрілого читання літератури на іноземній мові, при якому здійснюється перехід **від вивчення іноземної мови як навчального предмету до його практичного використання у професійних цілях.**

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PART I.

1.

1. Family Life.
2. Indefinite Tenses[1].
3. The Verb. The Noun[2].

I. Grammar Revision

Indefinite Tenses (Active)

Час (Tense)	Стверджувальна форма (Affirmative Form)	Заперечна форма (Negative Form)	Питальна форма (Interrogative Form)
Present	I **write** He She **writes** It You We **write** They	I **don't write** He She **doesn't write** It You We **don't write** They	**Do** I **write?** he **Does** she **write?** it you **Do** we **write?** they
Past	I He She It **wrote** You We They	I He She It **didn't write** You We They	I he she **Did** it **write?** you we they
Future	I **shall** We He **write** She It **will** You They	I **shan't** We He **write** She It **won't** You They	**Shall** I we he she **write?** **Will** it you they

[1] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів 1[x] курсів усіх спеціальностей РДТУ (Частина II). Рівне: РДТУ, 1999. – С. 17-27.

[2] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів 1[x] курсів усіх спеціальностей РДТУ (Частина I). Рівне: РДТУ, 1999. – С. 21, С.5-6.

Відмінювання дієслова to be (бути) в Indefinite Tenses.

PRESENT	I You He (she, it)	am are is a	I You He (she, it)	am not are not is not	Am Are Is	I you he (she, it)	Yes,	I am. he is. we are.
	We You They	are	We You They	are not	Are Are Are	we you they	No,	I'm not. he is not. we are not.
PAST	I He (she, it)	was	I He (she, it)	was not	Was	I he (she, it)	Yes,	I was. he (she, it) was.
	You We They	were	You We They	were not	Were	you we they	No,	you we they were not.
FUTURE	I He (she, it) You We They	shall be will be will be shall be will be	I He (she, it) You We They	shall not be will not be will not be shall not be will not be	Shall Will Will Shall Will	I he (she, it) you we they	Yes, No,	I shall he (she, it) will you will we shall not they will not

Відмінювання дієслова to have / have got в Indefinite Tenses.

PRESENT	I You We They	**have …** **have got (~'ve got)**	I You We They	**don't have …** **haven't got …**	**Do** **Have**	I you we they	**have …?** **got …?**
	He She It	**has…** **has got (~'s got)**	He She It	**doesn't have …** **hasn't got**	**Does** **Has**	he she It	**have …?** **got …?**
	! We can use ~ 've and ~ 's		**with have got, not with have**				
PAST	I You We They He She It	**had …**	I You We They He She It	**didn't have**	**Did**	I you we they he she it	**have … ?**
	! got – forms are less		**common in the past.**				
FUTURE	I We	**shall have …** **(~'ll have)**	I We	**shall not have …** **(shan't)**	**Shall**	I we	**have …**
	You He She It They	**will have …** **(~'ll have)**	You He She It They	**will not have … (won't)**	**Will**	you he she it they	**have …**
	! You can say: I shall (= will) and we shall (= we will) have …						

Remember: **Have** can be used with a object to refer to a large number of different activities. In some cases **have** = eat, drink, take, receive, spend, go for .. to have breakfast/lunch/tea …, to have a bath/a wash/ a shave …, to have a holiday/a talk, a swim/a look/a baby …

Have/have got + object (possession, illness, family relationship).

I've go a new car. My mother's got two sisters. Have you got a headache? [1]

II. Vocabulary Comprehension

1. Learn the words and word-combinations to comprehend the text:

residential area	житловий район
to move to a new flat	переїхати у нову квартиру
modern conveniences	сучасні зручності
central heating	центральне опалення
rubbish chute	сміттєпровід
designer	конструктор
nephew	племінник
niece	племінниця
to be two years his junior	бути на 2 роки молодшим за нього
relatives	родичі
aunt	тітка
uncle	дядько
cousins	двоюрідні брати (сестри)
smart and hardworking	кмітливий і працьовитий
to wear moustache	носити вуса
accountant	бухгалтер
tall and slim	високий і стрункий
ginger hair	руде волосся
fringe	чілка, чубок
to be short-sighted	бути короткозорим
shy	тихий, сором'язливий
ambitious	честолюбний, амбітний
gardening	садівництво

[1] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів 1^{x} курсів усіх спеціальностей РДТУ (Частина II). Рівне: РДТУ, 1999. – С. 4-8, С.12-14.

to be fond of smb. / smth.	любити когось / щось
to read fiction	читати художню літературу
to be keen on sports	захоплюватися спортом
chess tournament	шаховий турнір
to go shopping	іти за покупками
to keep a room neat	тримати кімнату у чистоті
to make much progress	робити великі успіхи
exact sciences	точні науки
production technologies	виробничі технології
son-in-law	зять
daughter-in law	невістка
first year student	першокурсник
mother-in-law	свекруха
father-in-law	свекор
to divorce	розлучатися
single(bachelor)	неодружений
maiden name	дівоче прізвище
to graduate from	закінчувати(університет)
to call after	назвати на честь…
to look younger/older	бути на вигляд молодшим /старшим

III. Reading Comprehension

1. Skim the text first to define its general subject and the subject of each paragraph. Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers…, describes…, informs…).

2. Skim the text again and answer the following questions:

1. Whose life's story is described?
2. Is Petro's flat mentioned?
3. Does Petro speak about his sister and brother?
5. Does Petro mention about his parents?
6. What university did Petro apply to?

3. Read the text:

Petro Kucherenko and His Family

First of all let me introduce myself. My name is Petro Kucherenko. I was born on the 18th of February, 1993, in Ostrog, Rivne region. This year I have finished secondary school No. 23 in Rivne. My family lives in one of the largest residential areas in a new flat. We moved into it five years ago. It is on the third floor of an eight-storey building. We have a four-room flat with all modern conveniences: hot and cold running water, electricity, central heating, gas, and telephone. There is a lift and a rubbish chute in our building.

My parents have two more children besides me. Thus, I have got an elder brother, Oleg, and a younger sister, Vira. My sister is a schoolgirl, she is a pupil in the 7th form. My brother is six years my senior. He is a designer by profession. He is married. His wife, Tetiana, is a journalist. There are four in their family and they live apart. They have two children – a son, Nazar, and a daughter, Kateryna. They are twins. They are my lovely little nephew and niece with golden hair and dark blue eyes.

My parents are not old at all. My father is forty nine and my mother is two years his junior. My grandparents are already pensioners, but they are still full of life and energy. I have many relatives – aunts, uncles, cousins.

My father's name is Volodymyr. He is an engineer in computers. He is a smart and hardworking man. Despite his late hours he always has time for us. He checks up our homework quite often, helps with maths and physics, and gives us a good advice when we need it. He is very tall, wears moustache, has got brown hair and grey eyes.

My mother's name is Olena. She is an accountant. She works for a private firm. She likes her job, but she's really busy. She is tall and slim, has got short, straight ginger hair with fringe and blue eyes. She wears glasses because she is short-sighted. In community she seems quite shy, but she's really ambitious and she isn't afraid of anything. She likes reading. Most of all she likes books written by Jane Osten and Aghata Christie. Besides reading she likes gardening. I think that if she weren't an accountant, she would be a gardener.

I am fond of reading too, and I prefer reading fiction and history books. I am keen on sports. I like playing football, basketball and chess. I am especially good at chess. I took part in different chess tournaments.

My sister and I try to help our mother about the house as much as we

can. We go food shopping very often; we also try to keep our rooms neat so she does not have too much work to do.

I love my family dearly. We do a lot of things together. In summer we often drive to the lake for a picnic or go to the theatre. Our favourite time of the day is suppertime. We sit around a big table and talk about our day at work and university. It's really nice to know that your family are your best friends.

In school I made much progress in exact sciences. That's why I applied to the National University of Water Management and Natural Resources Use to specialize in the branch of civil engineering. I was lucky enough. So today I am a first-year student of the Civil Engineering and Architecture faculty.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because…
Just the contrary…
I think…
To my mind…

1. Petro Kucherenko is 23.
2. He finished school No.23 in Kyiv.
3. Petro's family lives in a detached house.
4. There are two children in the family.
5. Petro is younger than Vira.
6. Oleh is a pupil.
7. Oleh works as a designer.
8. Tetiana is not married.
9. Vira has got twins.
10. Volodymyr knows maths perfectly.
11. Petro's mother is always free.
12. Olena works as a gardener.
13. Volodymyr is Petro's father.
14. Petro prefers team games.
15. The family is friendly.
16. Petro is a first-year student.
17. Petro studies at Kyiv University.

5. Study the text and answer the following questions:

1. How old is Petro?
2. Where and when was he born?
3. At what age did he go to school?
4. Where does his family live?
5. How many members are there in his family?
6. Has he got any brothers or sisters?
7. Where do his parents work?
8. What do Petro's grandparents do?
9. How old are his parents?
10. Does Volodymyr help the children with their homework?
11. Does Olena like her work?
12. In what way do the children help their parents?
13. What does Olena like besides reading?
14. What kind of books does Petro prefer reading?
15. Does he go in for sports? What kind of sports does he like?
16. How do they spend their leisure time?
17. What are Petro's favourite subjects?
18. Why did he apply to the National University of Water Management and Natural Resources Use?
19. Where would he like to work after graduating from the University?

IV. Vocabulary and Grammar Activator

1. Fill in the gaps in the following sentences choosing the right words from the box given below:

brother	mother	daughter-in –law	aunt
sister	children	first-year student	father
niece	wife	husband	nephew
grandparents	uncle		

1. Petro Kucheruk is a … .
2. Olena is his … .
3. Volodymyr is Petro's … .
4. Oleh is Petro's elder … .
5. Vira is Petro's younger … .
6. Nazar and Kateryna are Oleh's … .
7. Tetiana is Oleh's … .
8. Nazar is Petro's … .

9.Tetiana is Olena's … .
10.Volodymyr's brother is Petro's … .
11. Olena's sister is Petro's … .
12. Volodymyr and Olena's parents are Peto's … .

2. Write the plural of the following words:

man, woman, child, wife, nephew, daughter-in-law, family, husband, grandfather, niece, job, advice, hour, hair.

3. Form compounds from the nouns given:

mother, father, sister, brother, son, daughter.

4. Give the corresponding nouns:

to relate, to resemble, to be engaged, to marry, to be pensioned off, to be born, to introduce, to specialize, to build.

5. Express the following in one word:

1. a son of one's brother or sister;
2. a daughter of one's brother or sister;
3. two children born at the same time of the same mother;
4. a daughter's husband;
5. employment of any kind;
6. to separate a husband and wife by law;
7. an unmarried man;
8. a son's wife;
9. father brother's children;
10. parents' parents.

6. Explain the difference between the words:

parents-grandparents; aunt-uncle; nephew-niece; daughter-daughter-in-law; mother-mother-in-law; wife-housewife.

7. Make up questions and give answers:

1.

What is	your his her	brother's	age?
		sister's	name?
		father's	place of birth?
		mother's	place of work?
		aunt's	hobby?
		uncle's	maiden name

2.

(in what family?)	was / were	you	born?
(when?)		he, she	
(where?)		your sister	

8. Make up sentences:

My father's	hobby is	music.
My sister's		cinema.
My brother's		theatre.
My uncle's		reading.
My friend's		sports.
My mother's		gardening
		fishing.

9. Fill in the gaps in the following story. Put the verbs in the correct tense-form:

to come true	to set up	to live	to be (4)
to have got	to work (2)	to graduate	to get married

Oleh Kucherenko … born in 1987. He … 23 now. He … … when he … a university graduate. He … from Lviv Politechnica last year. He … as a designer for a private firm. His wife's name … Tetiana. She … as a journalist. They … … two children. They … twins. They … apart. Oleh would like … … his own firm. Probably his dreams … … true next year.

V. Talking Assignments

1. Work in pairs. Complete the following short dialogues:

1. – Hello, I'm Petro. What's your name?
– …….. .
– How do your friends call you?
– …… .
– Where are you from ?
– ……. .
– Are you a student ?
– ……. .

2. – ……..., ….?
– I am twenty.
– ……. .

– Thank you. You are actually the first person to tell me that. Everybody says I look older.

3. – Do you play any instruments?
– …… .
– What kind of music do you like?
– …….. .What is your hobby?
– …… .

4. – ……, … ?
– I have got a brother.
– …….. .?
– He is seven years older than me.
– …… .?
– No, actually he is a bachelor.
– …….. ?
– He is an architect.
– ……..?
– He is a university graduate. He studied in Rivne.

Key words: piano; violin; bandore; accordion; guitar; classical, folk, punk music; jazz; rap; collecting postcards (old coins, badges, books, records); reading; knitting; embroidery; athletics; games; single; married; divorced; widow/er.

2. Interview your friend, ask the questions in English about his/her family. Summarize his/her answers:

– Як тебе звати?
– Коли ти народився?
– Коли твій день народження?
– Звідки ти?
– З якої ти сім'ї?
– Чи є в тебе брати (сестри, родичі)?
– Скільки років твоїм батькам (сестрі, брату)?
– Хто найстарший в сім'ї?
– Де живуть твої батьки?
– Чим вони займаються?
– Чи є в тебе дідусь (бабуся)?
– Скільки їм років?
– Чи у вас дружна сім'я?

– Як ви проводите вільний час?
– Чи є у вас спільне хобі?
– Чи займаєтесь ви спортом? Яким?

3. Give a detailed description of each member of your family by answering the questions about:

a) Your father:

1. What does he look like?

Use: *be above medium height; very tall; with regular features; have fair hair, grey at the temples; brown eyes.*

2. How old is he?

Use: *be young, old, of middle age, in his forties, a man of forty.*

3. What is he like?

Use: *be silent, shy, quiet, not much of a talker, reserved, talkative, a good listener, a man of intelligence, be given to reflection, friendly, sociable, have an outstanding reputation in the field of … .*

4. Is he a devoted father?

Use: *develop interest in … ; encourage his children to … ; give much thought to their education; be proud of … .*

5. Is he fond of books and music?

Use: *be too busy to devote any time to … ; devote his spare time to …; be fond of … ; develop interest in … .*

b) Your mother:

1. What does she look like?

U s e: *be tall, short, have a lovely face, ordinary (plain) face, grey eyes, fair hair carefully arranged, make up very little (a lot),*

2. How old is she?

Use: *be forty (years old), a woman of forty, in her forties, of middle age, rather young (old).*

3. What are your mother's views on the upbringing of her children?

Use: *be clear-cut, old-fashioned, in favour of hard work, bring up one's children in a strict manner, give much thought and care to education (sport, good manners, health).*

4. What does she expect of her children?

Use: *want them to do well at school, be obedient, read a lot, be fond of sport.*

5. What does she think of her children?

Use: *be pleased with … ; be proud of … ; be fond of. . -.; think the*

world of ... ; approve of ... ; expect a lot of ...

6. Is she a good housekeeper?

Use: *run the house well, cook perfectly, keep house well.*

c) Your brother:

1. What does he look like?

Use: *be tall, strong, broad at the shoulders, slim at the waist, have regular white teeth.*

2. How old is he?

Use: *be fifteen, a teenager, a boy of fifteen.*

3. How does he do at school?

Use: *do well at school; be interested in ...; be bright; make good progress at school; work hard; give much care to ...; be in favour of ...; be fond of athletics, football, etc.; be obedient.*

d) Your sister:

What does she look like?

Use: *be pretty, have chestnut hair, blue eyes, lovely face, be full of life.*

4. Speak about yourself:

1. Finish the following sentences:

* When I have some free time I like … .
* In school I have always been (was) good at … .
* It has always been very difficult for me to … .
* I would describe myself as a … and … person.
* I enjoy going to parties where … .
* When I go out with my friends we usually … .
* When I am short of money I sometimes … .
* I am sometimes envious of people who … .
* I like (do not like) to have pets in my house because … .
* When I feel out of sorts (in a bad mood) I … .
* When I want to enjoy myself I usually … .
* I am not very interested in … .
* I find it very easy to … .
* I learn English because … .
* I like people who … .
* I try to avoid people who … .
* I am very proud of … .

* One day I hope to … .
* I don't like films which … .
* I think I look like … .

5. Answer the following questionnaire and find out how ambitious you are:

1. In 10 years do you hope to
a) be a married person with a family?
b) have an interesting but not very well-paid job?
c) have a well-paid job that isn't very interesting?

2. In 20-year time do you hope to
a) have enough money to pay your bills?
b) have quite a lot of money?
c) have a lot of money?

3. Here is a list of ten jobs. Which would you like to do? Put number 1 next to your favourite job:

nurse	*accountant*	*teacher*	*politician*	*policeman*
builder	*journalist*	*artist*	*engineer*	*actor / pop star*

4. Is improving your standard of living important to you?
a) Yes *b) No*

5. Do you think people who have money should help people who do not have money?
a) Yes *b) No*

6. How old do you want to be when you have children?
a) 18-20 *b) 23-26* *c) 27-30* *d) over 30*

7. When you are playing a game, do you always want to win?
a) Yes *b) No*

8. Can you tell a white lie?
a) Yes *b) No*

9. Do you think that rich people are happier and more interesting than other people?
a) Yes *b) No*

10. Do you work hard because you want to be successful?
a) Yes b) No

11. If you have some work to do, do you do it immediately, or do you wait until the last moment?
a) Immediately *b) I wait until the last moment*

12. Would you have more money than your parents?
a) Yes *b) No*

13. Do you agree with the philosophy "Every man for himself"?
a) Yes *b) No*

14. Do you like hard work?
a) Yes *b) No*

15. Which of the following is the most important for you?
a) love *b) happiness*
c) money *d) health*

Answers:

1.	a) 0;	b) 5:	c) 10.	
2.	a) 0;	b) 5;	c) 10.	
3.	nurse, artist – 0; builder, policeman, teacher, journalist – 2; engineer, actor, pop star – 5; politician – 10.			
4.	a) 10;	b) 0.		
5.	a) 0;	b) 10.		
6.	a) 0;	b) 2;	c) 5;	d) 10.
7-14.	a) 10;	b) 0;		
15.	a) 0;	b) 2;	c) 5;	d) 10.

Explanation:

0 – 50. You are not very ambitious! You are happy with a quiet life.

50 – 100. You are quite ambitious, but you do not want to work too hard.

Over 100. You are very ambitious! Good luck and try to be nice to people.

6. Summerize your answers. Do you agree to the explanation? If not, say why. Use the following phrases:

– I must disappoint you;
– In fact;
– On the one hand … on the other hand … ;
– To tell the truth;
– To start with;
– I must confess.

VI. Written Assignment

1. Write a short presentation about your family and yourself.

2. 1. Everyday Life.
2. Continuous Tenses[1].
3. The Article. The Numeral[2].

I. Grammar Revision

Continuous Tenses (Active)

Час (Tense)	Стверджувальна форма (Affirmative Form)	Заперечна форма (Negative Form)	Питальна форма (Interrogative Form)
Present	I **am** You, We, They **are** **writing** He, She, It **is**	I **am not** You, We, They **aren't** **writing** He, She, It **isn't**	**Am** I **Are** you, we, they **writing?** **Is** he, she, it
Past	I, He, She, It **was** **writing** You, We, They **were**	I, He, She, It **wasn't** **writing** You, We, They **weren't**	**Was** I, he, she, it **writing?** **Were** you, we, they
Future	I, We, You, They, He, She, It **shall/will** **be writing**	I, We, You, They, He, She, It **shan't/won't** **be writing**	**Shall** I, we **be** you, they **writing?** **Will** he, she, it

[1] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів 1[x] курсів усіх спеціальностей РДТУ (Частина ІІ). Рівне: РДТУ, 1999. – С. 28-35.

[2] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів 1[x] курсів усіх спеціальностей РДТУ (Частина І). Рівне: РДТУ, 1999. – С. 7-8, 15-17.

II. Vocabulary Comprehension

1. Learn the words and word-combinations to comprehend the text:

favourite saying	улюблене прислів'я
ordinary	звичайний
first-year student	першокурсник
tight	важкий
healthy	здоровий
wealthy	багатий
wise	мудрий
to waste time	гаяти час
to wake up	прокидатися
to do morning exercises	робити зарядку
to take(have) a shower	приймати душ
to take(have) a bath	приймати ванну
slippers	капці
to brush teeth	чистити зуби
to shave	голитися
to do harm	зашкодити
to listen to music	слухати музику
to listen to the radio	слухати радіо
to watch TV	дивитися телевізор
to leave for …	йти (їхати) до...
It takes him … to do smth.	йому потрібно ... , щоб зробити ...
to have a bite	перекусити
hard-working	працьовитий
to get by …	діставатися ...
to spend time	проводити час
an early-riser	той, хто рано встає
to be in 15 minutes' walk	знаходитися в 15 хвилинах ходу
a break	перерва
to cope with	впоратися
to do one's shopping	робити покупки
a sleepyhead	соня
to play football	грати у футбол
to play the guitar	грати на гітарі
substantial(big) breakfast	поживний сніданок
light breakfast	легкий сніданок
to be(get) used to doing smth.	звикнути щось робити

to go out	ходити в гості
to rent a flat	орендувати квартиру

III. Reading Comprehension

1. Skim the text first to define its general subject and the subject of each paragraph. Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers…, describes…, informs…).

2. Skim the text again and answer the following questions:

1. Whose working day is described?
2. Is Petro's favourite saying mentioned?
3. Is Petro's ordinary morning described?
5. Are Petro's daily activities at the University mentioned?
6. Is Petro's ordinary evening described?

3. Read the text:

Petro's Working Day

Petro is a first-year student. His working day is rather tight. He doesn't like getting up late. Petro always says, "early to bed, early to rise makes a man healthy, wealthy and wise". He believes there is not enough of each day as it is, without wasting the beginning of it.

This day starts like any other day. Petro wakes up at seven o'clock. He is used to staying in bed for a minute or two, then gets up, opens the window, makes his bed and does his morning exercises. He likes to take a cold shower every morning, so he puts on his slippers and goes to the bathroom. After he has brushed his teeth, shaved and dressed he goes to the kitchen. At 7.20 a.m. he is ready for breakfast. As a rule he does not prepare breakfast, his mother does it for him, but if she leaves home early he prepares it himself. Petro is sure that proper breakfast won't do him any harm. For breakfast he usually has eggs, sausage or cheese sandwiches and a cup of coffee or tea. During breakfast he listens to the news or music on the radio.

At 7.40 a.m. Petro leaves for the university. His university is far from his home, so it takes him twenty five minutes to get there by route taxi.

On his way to the University he often meets his friends, who are hurrying to the University too. His classes begin at 8.15 a.m. As a rule, Petro has three or four classes a day. At 11.45 a.m. he has a bite at the university canteen. As a matter of fact he stays at the University till five or six o'clock to study in the lab or in the library.

When he gets home he has his dinner. He usually has a little rest and then at seven he sits down to do his homework. It takes him a couple of hours to get it done. In the evening after supper Petro likes to sit down in the chair with a good book or watch TV. Sometimes he goes to the cinema or visits his friends or they come to visit him. He has a lot of friends and they often spend time together, especially on Sundays. As soon as he feels sleepy he brushes his teeth, goes to his room, sets his alarm clock for seven and goes to bed. Although Petro is a hard-working student he never has time to do all he wants to do.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because…
Just the contrary…
I think…
To my mind…

1. Petro is a second-year student.
2. He is a sleepy-head.
3. Petro starts his day by doing morning exercises.
4. Petro always prepares his breakfast himself.
5. He prefers having light breakfast.
6. He gets to the University on foot.
7. His classes begin at 8.15 a. m.
8. Petro stays at the University till 2.00 p.m.
9. He never has a rest after classes.
10. It takes him much time to do his homework.
11. Petro's friends sometimes come to him.
12. Petro often wastes his time.
17. Petro studies at Kyiv University.

5. Study the text and answer the following questions:

1. Is Petro a student?

2. What is his favourite saying?
3. Does Petro get up at 7.00 a.m. sharp?
4. Does he take a bath in the morning?
5. Who prepares his breakfast?
6. What kind of breakfast does he prefer?
7. When does he leave for the University?
8. Why does he get there by route taxi?
9. How long does he stay at the University?
10. What does he do at the University?
11. When does Petro come home?
12. What does he do at home?
13. What does he usually do when he has free time in the evening?
14. When does he go to bed?

IV. Vocabulary and Grammar Activator

1. Insert articles wherever necessary:

I generally get up at 7 o'clock in ... morning. I have ... lot of things to do before I leave for ... University. So I get up and begin doing my morning exercises. After that I go to ... bathroom where I wash and clean my teeth. I usually take … cold shower. Then I comb my hair and get dressed. In fifteen minutes I am ready to have breakfast. As ... rule it is my mother who makes ... breakfast. I leave ... house and go to ... University. It takes me ... quarter of ... hour to get to ... place. ... classes start at nine and are over by three. When ... classes are over, I go straight to ... canteen and have ... dinner. Then I go to ... reading-room. There I read ... books and journals, make notes and look through ... newspapers and magazines. In ... evening I usually take ... short walk. Before I go to bed, I read ... little and listen to ... radio.

2. Give negative answers to the questions. Use *Present Continuous*.

Mode1: **a)** – Are you ready to have breakfast? (shave)
– Not yet. **I am still shaving.**
b) – It is 8.10. Is Petro at the University? (come)
– Not yet. He **is just coming.**

1. It is 7 o'clock. Is Petro in the bathroom? (get up) 2. Is the dinner ready? (Mother, get it ready) 3. Is Petro through with his exams? (take exams) 4. Are you ready to go out? (dress) 5. Can I have a cup of coffee? (boil the kettle for coffee) 6. It is 7.30 a.m. in the morning. Is Petro at the

University? (have breakfast) 7. It's time to go to bed. Is Petro in bed? (brush his teeth). 8. Is the room neat and tidy? (Petro, make the bed) 9. Is the table laid? (Mother, put cups, saucers and plates on the table). 10. Is the breakfast on the table? (Mother, carry it on a tray)

3. Describe the same situation using *Present Continuous*.

Model: **1.** The Kucherenkos are at the dining-table. The bacon and eggs before them are very good. So is the coffee.

2. The Kuchernkos **are eating** the bacon and eggs. They **are drinking** the coffee.

1. Olena is at home. The television is on and she is in front of it. 2. Vira likes orange juice. There is a glass of it in her hand. 3. Volodymyr is very good at tennis. He is on the tennis-court now. 4. Volodymyr is in the bathroom. His hand is on the tap. 5. It is 7.00 a.m. Mother is in the kitchen. The breakfast must be ready at 7.15 a.m. 6. Vira is on the bus now, on her way to school. 8. Petro is in his room. The English textbook is in front of him. 9. Oleg likes football. Today is Sunday and you can find him at the football-club. 10. It is 7.05. Petro is in the bathroom with a toothbrush in his hand.

4. Look through the text and point out what Petro was doing yesterday at:

7 a.m.; 7.30 a.m.; 8 a.m.; 8.30 a.m.; 12 p.m.; 4 p.m.; 5 p.m.; 8 p.m.; 10 p.m.; 11.30 p.m. .

5. Translate into English:

1. Олена студентка першого курсу. Вона прокидається о 7.00 рівно. Їй важко вставати. Справа в тому, що вона не рання пташка. Олена любить полежати після того, як задзвонив будильник. Їй потрібно декілька хвилин, щоб прийняти душ. Потім вона одягається і поспішає на кухню, щоб перекусити. Олена живе сама – вона орендує однокімнатну квартиру. Її холодильник, зазвичай, порожній. Їй не подобається витрачати час на приготування їжі. Вона живе в 15 хвилинах ходу від університету. Після чотирьох пар Олена поспішає до їдальні пообідати, потім заняття спортом. Повертається вона додому після шостої, трошки відпочиває і починає готувати домашні завдання.

2. – Що ви зазвичай їсте на сніданок?

– Пару бутербродів і чашку кави.

– А мені потрібен поживний сніданок. Я не можу починати день добре не поснідавши.

3. – Зарядку необхідно робити щодня.

– Так, ви маєте рацію. Але я не можу встати рано. Я пізно встаю та пізно лягаю.

– А я люблю вставати рано.

V. Talking Assignments

1. Work out short dialogues according to the model:

– **How long does it take** you (him, her ...) to do it?

– Generally it **takes** me (him, her ...) about 5 minutes (half an hour, an hour and a half, 2 hours).

Use the words: to wash and get dressed, to clean one's teeth and comb one's hair, to have dinner, to do one's morning exercises, to prepare for one's classes, to do one's English home-work, to make one's bed, to get to the University, to look through a newspaper, to make notes, to get ready for a credit-test, to prepare for one's exam (seminar) in ancient history.

2. Make up *wh*-questions. Let your fellow-student answer them:

where – to have supper, to go right after classes, to do one's home-work, to wash and clean one's teeth, to look through newspapers and magazines;

when – to wake up, to get up, to go to bed, to work at the library, to have one's exams, to leave for the University, to have dinner;

what – to have for supper as a rule, to keep in one's bookcase, to look through in the morning, to call a room where you sleep;

who – to wake you up, to examine the students of that group, to help you with your English, to make breakfast for you.

3. Translate the following into English. Begin your sentences with:

a) **It's necessary to …** (вставати рано; щодня виконувати домашнє завдання; робити ранкову зарядку; конспектувати всі лекції);

b) **I hardly ever …** (обідаю в нашій їдальні; лягаю спати рано, прогулююсь, дивлюся телевізор);

c) **As a matter of fact I …** (залишаюсь в університеті майже цілий

день; приймаю душ (ванну) вранці (ввечері); обідаю в університетській їдальні);

d) **Generally I …** (йду додому пішки; прокидаюсь рано; у мене багато справ; виходжу з дому біля восьмої);

e) **As a rule I ...** (снідаю; вечеряю; готуюсь до занять в читальному залі; переглядаю газети.).

4. Interview your friend, ask the questions about his/her working day:

P.:

B.: I **generally** get up at seven o'clock.

P.:

B.: Because **I have a lot of things to do** before 1 leave for the University.

P.:

B.: Yes, that's what I begin with **as a rule.** Then comes the usual procedure of making my bed, washing and so on.

P.:

B.: No, I don't. **As a matter** of fact I hardly ever take a bath in the morning. I **prefer** taking a shower. Then I **clean** my **teeth**, **comb** my **hair** and **get dressed.**

P.:

B.: If my mother is not up yet, I make my breakfast myself. If my mother is up, she does. After breakfast I usually help mother **to clean up**.

P.:

B.: Generally at half past eight, as **it takes me about twenty minutes** to get to the University.

P.:

B.: I always take a trolley-bus in the morning. But after classes I sometimes walk home.

P.:

B.: Sometimes I do, and sometimes I don't. If I can prepare for the next day's classes at home, I go straight home. If I haven't got the necessary books and journals at home, I go to the library.

5. Summerize his/her answers. Describe how your friend usually begins his/her day:

Use: *early (late) riser; get up early (late); wake up at ...; take a shower; brush teeth, shave, dress; have breakfast; have a busy day (much work) ahead; have no spare time; work hard; waste time; devote much time to ... ; sit up late; a busy man; work on ... .*

6. Do you agree with the English saying which says: "Early to bed, early to rise makes a man healthy, wealthy and wise"? Give your reasons:

– To start with;
– Frankly speaking;
– To tell the truth;
– The thing is;
– I must confess;
– On the one hand … and on the other hand … .

7. Ivan Petrenko works for the University newspaper "Trybuna studenta". He is asking students about their free time. Translate his questions into English:

– Коли ви зазвичай повертаєтеся додому?
– Коли ви обідаєте?
– Хто готує вам обід?
– Скільки часу ви витрачаєте на приготування обіду?
– Ви можете собі дозволити відпочинок після занять?
– Ви ходите на прогулянки (в театр, в кіно, на виставки)? Як часто?
– Ви дивитеся телевізор? Які ваші улюблені передачі?
– Ваші друзі приходять до вас?
– Ви ходите в гості? Як ви проводите час?
– Коли ви готуєтеся до занять?
– Скільки часу ви витрачаєте на домашні завдання?
– Коли ви лягаєте спати? Чому так пізно (рано)?

8. Write a short article about students' free time.

VI. Written Assignment

1. Write a short presentation about your ordinary working day.

3. 1. Student Life Today.
2. Perfect Tenses[1].
3. The Adjective. The Adverb. The Pronoun[2].

I. Grammar Revision

P e r f e c t t e n s e s (A c t i v e)

Час (Tense)	Стверджувальна форма Affirmative Form	Заперечна форма Negative Form	Питальна форма Interrogative Form
Present	I, You, We, They **have** written; He, She, It **has** written	I, You, We, They **haven't** written; He, She, It **hasn't** written	**Have** I, you, we, they **written?**; **Has** he, she, it **written?**
Past	I, You, We, They, He, She, It **had written**	I, You, We, They, He, She, It **hadn't written**	**Had** I, you, we, they, he, she, it **written?**
Future	I, We **shall**; You, They, He, She, It **will** have written	I, We **shan't**; You, They, He, She, It **won't** have written	**Shall** I, we; **Will** you, they, he, she, it have written?

[1] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів 1[x] курсів усіх спеціальностей РДТУ (Частина ІІ). Рівне: РДТУ, 1999. – С. 4-10.

[2] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів 1[x] курсів усіх спеціальностей РДТУ (Частина І). Рівне: РДТУ, 1999. – С. 9-14, 18-20.

II. Vocabulary Comprehension

1. Learn the following words and word-combinations to comprehend the text:

to be founded/foundation	заснувати /заснування
to grant the status	надати статус
to acquire the status	набути статусу
research workers	наукові співробітники
to consider	вважати
abroad	за кордоном
to enjoy reputation	мати репутацію
skilled specialist	кваліфікований спеціаліст
to enroll	нараховувати
day-time department	денне (стаціонарне) відділення
correspondence ~	заочне відділення
modular system	модульна система
to complete a course	завершити курс
to gain a degree	отримати ступінь
to last	тривати, продовжуватись
to run from ... till ...	тривати з ... до ...
to attend classes	відвідувати заняття
to be accompanied by	супроводжуватись
to take/pass exams	складати іспити
yearly project	курсова робота
staff	штат
associate-professor	доцент
profound	глибокий
to be engaged in ...	займатися
to patent	запатентувати
requisite	відповідний
recreation	відпочинок
undergraduate	студент старшого курсу
graduate	випускник
postgraduate	аспірант
to graduate from	закінчувати університет
lecture theatre	лекційний зал
access	доступ
hall of residence	гуртожиток
to be available	бути доступним

to offer	пропонувати
choir	хор
prestige	престиж, престижний
to be highly rated	мати високий рейтинг
maturity	зрілість
to train specialists	готувати спеціалістів
term	семестр
dean's office	деканат
to face the test	стояти перед випробуванням
forerunner	попередник
study building	навчальний корпус

2. Read the names of the faculties. Give Ukrainian equivalents:

Faculty of Applied Mathematics and Computer-integrated Systems;
Civil Engineering and Architecture Faculty;
Faculty of Ecology and Natural Resources Use;
Faculty of Economics and Entrepreneurship;
Faculty of Management;
Faculty of Water Management;
Hydrotechnical and Hydropower Engineering Faculty;
Faculty of Land Management and Geoinformation;
Mechanical and Heatpower Engineering Faculty.

3. Read the names of the specialities. Give Ukrainian equivalents:

Hydrotechnical Construction; Hydromelioration; Automobile Engineering; Hoisting Transport, Building and Land Reclamation Machines and Equipment; Mineral Mining Engineering; Logistics and Transport Management; Accounting and Audit; Finance; Management of Organization; Applied Mathematics; Human Resources Management and Economics of Labour; Ecology and Environmental Engineering; Land Management and Cadastre; Agrochemistry and Soil Science; Civil Engineering; Technology of Production of Building Constructions and Elements; Aerodrome and Highway Engineering; Heat and Gas supply and Ventilation; Town Planning and Development; Water Supply and Water Disposal; Automated Control of Technological Processes; Water Bioresources and Aquaculture; Architecture of Structures; Economics of Production; Heatpower Engineering; Geoinformation Systems and Technologies; Hydropower engineering.

III. Reading Comprehension

1. Skim the text first to define its general subject and the subject of each paragraph. Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers…, describes…, informs…).

2. Skim the text again and answer the following questions:

1. What university is the text about?
2. Is the history of the university described?
3. Are the faculties and specialities mentioned?
4. Are students' everyday activities described?
5. Is the university campus described?

3. Read the text:

National University of Water Management and Natural Resources Use.

The history of the University began in the year 1922, with the foundation of its forerunner Hydromeliorative technical school. Five years later it became a school of higher learning known as Kyiv Hydromeliorative Institute. In 1959 it was moved to the city of Rivne and granted the status of All-Republican Institute. In December 1995 the Institute was reorganized into the State Academy. In 1998 the Academy acquired the status of a University, with the title Rivne State Technical University. In 2004 the University was granted the highest status and now its title is the National University of Water Management and Natural Resources Use.

The University has become one of the leading scientific, educational and technological centres of Ukraine. It trains engineers and research workers for different branches of national economy. It is considered to be Alma-Mater for almost 50,000 specialists who work in Ukraine and abroad. The University enjoys national and international reputation for the contribution in scientific research and training of skilled specialists.

The University currently enrolls more than 15,000 day-time and correspondence students. They study at nine faculties:

Faculty of Applied Mathematics and Computer-integrated Systems;

Civil Engineering and Architecture Faculty;
Faculty of Ecology and Natural Resources Use;
Faculty of Economics and Entrepreneurship;
Faculty of Management;
Faculty of Water Management;
Hydrotechnical and Hydropower Engineering Faculty;
Faculty of Land Management and Geoinformation;
Mechanical and Heatpower Engineering Faculty.

A modular system of academic programmes has been introduced, following the example of the world's leading technological universities. In addition to engineering degrees in various specialisms, these programmes lead to the degree of Bachelor and Master. It takes four years to complete a course leading to the degree of Bachelor, five years to gain the degree of Engineer (Specialist) and Master. Students may specialize in 28 areas: Hydrotechnical Construction; Hydromelioration; Geoinformation Systems and Technologies; Automobile Engineering; Hoisting Transport, Building, Road and Land Reclamation Machines and Equipment; Mineral Mining Engineering; Equipment of Chemical Production and Building Materials; Heat Power Engineering; Logistics and Transport Management; Accounting and Audit; Management; Applied Mathematics; Management of Labour Resources; Ecology; Land Management and Cadastre; Agrochemistry and Soil Science; Civil Engineering; Technology of Production of Building Constructions and Elements; Aerodrome and Highway Engineering; Heat and Gas Supply and Ventilation; Town Planning and Development; Water Supply and Water Disposal; Automated Control of Technological Processes; Water Bioresources and Aquaculture; Architecture of Structures, Finance, Economics of Production.

Most of the faculties have day-time as well as correspondence departments. The term of study for day-time students lasts 4, 5 or 6 years. The academic year runs from September till June and is divided into two terms: Autumn and Spring, and it has two vacations. During the term students have to attend lectures, classes and seminars. The study of theory is usually accompanied by practical training. At the end of each term our students take exams, tests and hand in yearly projects. At the end of training they defend their diploma projects. Advanced students may defend them in a foreign language.

Today, our University has a teaching and research staff of over 700

professors, associate-professors, senior and junior lecturers, who offer manysided and profound knowledge to their students. They are also engaged in research work. A lot of their inventions have been patented and introduced into production not only in Ukraine but abroad.

The University provides the requisite teaching, research and recreation facilities for its day-time students, postgraduates, lecturers and other staff. There are numerous spacious lecture theatres, laboratories, study rooms with up-to-date equipment, computer centres, design studios, etc.

The University campus is conveniently situated on two picturesque hills in the outskirts of Rivne. The location has the advantages of easy access to the railway and bus stations as well as to the main shopping centres, banks and cafes. The campus includes seven academic buildings; eight halls of residence, where suitable living accomodation is arranged; library and computing centres, which help students at every stage of their training; sport facilities, where students can enjoy the benefits of regular exercise. Full medical service is available in health centre.

The University offers an enormous range of art activities. Anyone who enjoys singing and dancing can join the University choir, music, song and dance groups.

Our University, one of the prestige higher educational institutions in Ukraine, is highly rated by young people.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because…
Just the contrary…
I think…
To my mind…

1. The National University of Water Management and Natural Resources Use is 70.
2. It was founded in Rivne.
3. It acquired the status of a university in 1998.
4. The University trains engineers and researchers.
5. The University currently enrolls more than 25.000 students.
6. There are eight faculties at the University.

7. The University graduates can gain the degree of Bachelor, Specialist and Master.

8. They can specialize in 32 areas.

9. At the end of every academic year students defend their diploma projects.

10. The University provides the requisite teaching, research and recreation facilities.

11. The campus is situated in the centre of the city.

12. The University is highly rated by young people.

5. Study the text and answer the following questions:

1. When was the University founded?
2. When was it moved to the city of Rivne?
3. What status did the University acquire in 2004?
4. What specialists does the University train?
5. Why does the University enjoy national reputation?
6. How many students study here?
7. How many faculties are there at the University?
8. What degrees does the University offer?
9. When does the academic year begin and finish?
10. What do the students usually do during the term?
11. What is the teaching and research staff of the University?
12. Where is the campus situated?
13. What does the campus include?
14. What activities does the university offer?

6. Look through the text again and then complete the following sentences by selecting the most appropriate statement in each case:

1. The University was founded in … .
   a) 1922; *b) 1959;* *c) 1998.*
2. It is considered to be Alma Mater for almost … specialists.
   a) 50.000; *b) 30.000;* *c) 40.000.*
3. The University has … departments.
   a) day-time; *b) evening;*
   c) day-time and correspondence.
4. There are … faculties at the University.
   a) nine; *b) twenty three;* *c) three.*

5. It takes … years to gain a Bachelor degree.
   a) 6; *b) 4;* *c) 5.*
6. The academic year is divided into … terms.
   a) 2; *b) 3;* *c) 4.*
7. … may defend his diploma project in a foreign language..
   a) Any student; *b) Advanced student;* *c) Poor student.*
8. The campus includes … academic buildings.
   a) 8; *b) 7;* *c) 9.*

IV. Vocabulary and Grammar Activator

1. Say which faculties train the following experts:

mechanical engineer, air-conditioning engineer, automatic control engineer, civil engineer, environmental engineer, gas engineer, heating and ventilation engineer, hydraulic engineer, reclamation engineer, economist, accountant, auditor, manager, programmer, financier, architect, human resources manager, miner, agrochemist, sanitary engineer, land surveyor, land manager, production manager, town planner and developer, mathematician.

Start with: a (an) …(engineer) is trained at … Faculty/at the Faculty of … .

2. Find in the text words formed from the stems of the following ones:

high, learn, organize, lead, science, work, skill, manage, engineer, build, plan, equip, chemistry, transport, practice, convenient, picture, shop, sing, suit, graduate, invent.

3. Complete the definitions with the correct nouns from the text:

1. ……. is a university department (a group of university departments) concerned with a major division of knowledge.
2. ……. is a person who is studying, esp. at university or another place of higher education.
3. ……. is an educational institution designed for instruction, examination, or both, of students in many branches of advanced learning … .
4. ……. is the university, school, or college one attends or attended. (Latin, = bounteous mother)
5. ……. is highly trained or experienced.

6. ……. is a man or woman who has taken the degree of Bachelor of Arts or Science etc.

7. ……. is a holder of a university degree originally giving authority to teach in the university.

8. ……. is a period of some weeks, alternating with holiday or vacation, during which instruction is given in a school, college, or university.

9. ……. is the grounds and buildings of a university or college.

10. ……. is a university residence for students.

4. Find the preposition that usually follows the verbs. Some of the verbs are not followed by a preposition. Compose your sentences:

to move	by to on at in into no preposition
to enjoy	
to study	
to lead	
to gain	
to divide	
to be accompanied	
to give	
to be engaged	
to be situated	
to join	

5. Translate the following sentences into English:

1. НУВГП існує з 1922 року.

2. Університет став одним з найпрестижніших вищих навчальних закладів України.

3. До того як університет став Національним, він був Рівненським державним технічним університетом.

4. Університет уже підготував більш ніж 50 000 висококваліфікованих спеціалістів.

5. Наші студенти вчаться на дев'яти факультетах.

6. Факультет будівництва і архітектури – один з найстаріших в університеті.

7. Сотні студентів університету за останній час здобули ступінь магістра.

8. Більш ніж 200 випускників захистили свої дипломні проекти

іноземними мовами.

9. Науковці університету запатентували дуже багато винаходів.

10. Факультет будівництва і архітектури готує інженерів-будівельників, архітекторів, дизайнерів.

V. Talking Assignments

1. Divide the text into logical parts. Express the main idea of each part in the shortest possible way:

– The first (second, third…) part of the text is about …
– It describes (considers, deals with, informs) …
– The author stresses (points out) that …

2. Discuss with your friend each part of the text. You may introduce your questions with the following phrases:

– Could you tell me …? Do you know …?
– Do you happen to know …?
– Is it true that …?
– I've heard that … . Is it really true?
– I'd like to know if …?
– Could explain why/where/how/what …?
– What is your opinion about …?
– What do you think of …?
– Do you agree with/to?
– I wonder if you take part in …?

3. Translate the following words and word-combinations:

as for me/her/him; to study at; I'm/he is/she is a first year student; dean; dean's office; subdean/assistant dean; full-time department; refectory; tutor; academic building; to occupy; to be located; to be founded; to train; graduates; the students specialize in; laboratories; tuition fee; campus; It takes me/ him/her … to do … .

4. Interview your friend in English. Find out what he/she knows about the faculty he/she studies at:

– На якому факультеті ти навчаєшся?
– Коли був заснований ФБА?
– Яких спеціалістів готує факультет?
– Які ступені отримують випускники?

– В якому корпусі знаходиться деканат ФБА?
– Хто ваш декан?
– Чи є заступники декана? Хто вони?
– Хто ваш куратор?
– Чи допомагає він вам адаптуватися до нових умов?
– Яка плата за навчання?
– Де живуть студенти?
– Чи далеко гуртожиток від навчальних корпусів?
– Скільки часу ви витрачаєте на дорогу?
– Скільки часу ви витрачаєте на підготовку до занять?
– Чи є в гуртожитку їдальня/читальний зал/кімната відпочинку?
– Чи подобається вам вчитися на факультеті?

5. Summarize your friend's answers. Use the words and word-combinations from Ex. 3.

6. Prove that:

a) The University is one of rather old and prestige educational institutions in Ukraine.

b) The University is a research centre.

c) The students of the University have a nice campus.

d) The students have all opportunities to become skilled specialists.

Use the following words and phrases: I think that...; Frankly speaking...; I'd like to call your attention to...; This is my point of view...; I'm sure that … .

7. Get ready to speak about:

a) The History of the National University of Water Management and Natural Resources Use.

b) The Campus of the University.

c) Academic facilities at our University.

d) Extra-curricular activities (sport, social and cultural events).

VI. Written Assignment

1. Write a short presentation about the University and the Faculty you study at.

Test № 1 (Units 1,2,3).

Test your professional, socio-cultural and language competences.
Mark the correct variant.

1. English equivalent for "житловий район" is … .
   1. residential area; *2. apartment;* *3. rubbish chute.*
2. I am … on sports.
   1. fond; *2. keen;* *3. good.*
3. My sister and I try to help our mother … the house as much as we can.
   1. of; *2. about;* *3. on.*
4. Plural form for woman is … .
   1. womans; *2. women;* *3. womens.*
5. A daughter of one's brother or sister is a … .
   1. nephew; *2. niece;* *3. uncle.*
6. I generally get up … 7 o'clock in the morning.
   1. in; *2. at;* *3. on.*
7. Olena is at home. The television in … and she is in front of it.
   1. on; *2. over;* *3. out.*
8. English variant for "закінчувати університет" is to … from.
   1. finish; *2. graduate;* *3. leave.*
9. The National University of Water Management and Nature Resources Use was granted the highest status in … .
   1. 2000; *2. 2004;* *3. 1998.*
10. The academic year is divided into … terms.
    1. one; *2. two;* *3. three.*
11. The campus includes … academic buildings.
    1. 8; *2. 7;* *3. 6.*
12. It takes … years to gain a Bachelor degree.
    1. 6; *2. 4;* *3. 5.*
13. There are … faculties at our University.
    1. nine; *2. eight;* *3. seven.*
14. Only … may defend his diploma project in a foreign language.
    1. any student; *2. poor student;*
    3. advanced student.
15. The faculty of … trains future engineers in Town Planning and Development, Technology of Production of Building Constructions and Elements, Civil Engineering, Aerodrome and Highway Engineering.
    1. Water Management; *2. Civil Engineering and Architecture;*
    3. Faculty of Management.

16. Our University is considered to be Alma Mater for almost … specialists.

1. 30 000; *2. 50 000;* *3. 40 000.*

17. Our University started its life in Kyiv as a … .

1. polytechnic institute; *2. hydromeliorative institute;*
3. hydromeliorative technical school.

18. The English for "сміттєпровід" is … .

1. rubbish chute; *2. fringe;*
3. central heating.

19. I am especially good … chess.

1. in; *2. on;* *3. at.*

20. In school I made … progress in exact sciences. That's why I applied to our University.

1. much; *2. little;* *3. small.*

4.

1. Construction Industry.
2. From the History of Building.
3. English Word Building.

I. Grammar Revision

Словотвір в текстах функціонального стилю науки

Найпоширенішими способами словотвору в англомовній науково-технічній літературі є такі:

1. Афіксація (префіксація та суфіксація)
2. Конверсія
3. Словоскладання

ОСНОВНІ ПРЕФІКСИ ТА ЇХ ЗНАЧЕННЯ

Префікс	Значення	Приклади
un-	заперечне, протилежне	unreliable
dis-	заперечне, протилежне	disadvantage
im- (перед m, p)	заперечне, протилежне	impervious
in-	заперечне, протилежне	inadequate
ir- (перед r)	заперечне, протилежне	irregular
mis-	заперечне, протилежне	misuse
il- (перед l)	заперечне, протилежне	illogical
* anti-	заперечне, протилежне	antisocial

* extra-	зверх-, над-	extraordinary
* counter-	проти	counterwork
over-	пере-, надзвичайно	overwater, overgrazing
* re-	знову, повторно	redistribution
* sub-	під, нижче	subirrigation
semi-	напів-	semiarid
* super-	пере-, зверх-	superheat
under-	недо-, нижче норми	underestimate
* inter-	між, взаємо-	interaction
* non-	не-	noninterference

Зірочкою (*) позначені префікси-інтернаціоналізми.

ОСНОВНІ СУФІКСИ ІМЕННИКІВ

V (verb) – дієслово, N (noun) – іменник, A (adjective) – прикметник, Num (numeral) – числівник, Adv (adverb) – прислівник.

Модель	Значення	Приклади
V+ -ment	результат дії	movement, attachment
V+ -ion (-tion)	процес, назва дії, стан	erosion, irrigation, reaction
V+ -er, -or	особа/механізм, що виконує дію	sprinkler, user, creator
V+ -ing	процес, дія, стан	melting, cutting
V+ -ance/-ence	дія, стан	conveyance, performance
V+-al	назва дії	renewal, disposal
V+ -ure	дія, результат	pressure
V+-y	назва дії	delivery
V+-th	результат дії	growth
A+ -th	стан	width
A+ -ness	якість, стан	wetness
A+ -ure	якість, стан	moisture
A+-y	якість, стан	efficiency
A+ -ity	якість, стан	aridity
N+ -ist	особа, що займається	biologist
N+ -ian	той, що має відношення до ...	mathematician
N+ -hood	абстрактне поняття	boyhood, brotherhood

ОСНОВНІ СУФІКСИ ПРИКМЕТНИКІВ

Модель	Значення	Приклади
A+ -al	якість	automatical, economical
N+-al	наявність якості	experimental
N+ -ful	наявність якості	fruitful, powerful
N+-y	наявність якості	sandy
V+ -able / -ible	спроможний щось зробити	favourable, arable
V+ -ant / -ent	наявність якості	resistant, different
N/V/Num.+ -ary	наявність якості	primary, secondary
N+ -ous	наявність якості	impervious
N+ -less	відсутність якості	waterless
N+-ic	наявність якості	symbolic, characteristic
N+-ly	такий, що має якості основи	friendly, monthly

ОСНОВНІ СУФІКСИ ДІЄСЛІВ

Модель	Значення	Приклади
N+ -ify	дія	gasify, classify
A+ -ify	дія	intensify, simplify
A+-en	дія	moisten
N+ -ize	дія	computerize, modernize
N+ -ate	дія	indicate

ОСНОВНІ СУФІКСИ ПРИСЛІВНИКІВ

Модель	Значення	Приклади
A+-1y	змінює частину мови	efficiently
N+ -ward	напрямок	backward (s)
Adv.+ -ward	напрямок	upward

КОНВЕРСІЯ

Конверсія – це спосіб словотвору, досить поширений в англійській мові, при якому від слова однієї частини мови утворюється слово іншої частини мови без зміни зовнішньої форми слова:

to stop – a stop, зупиняти – зупинка

water – to water, вода – поливати

Найбільш поширеним є утворення іменника від відповідного

дієслова: V → N :

to march – march

to run – run

Досить часто має місце і утворення дієслова від іменника: N → V:

pump – to pump

Часто дієслово утворюється від прикметників: A → V:

empty – to empty

СЛОВОСКЛАДАННЯ

Складні слова утворюються шляхом об'єднання двох основ:

waterworks –водопровідні споруди, утворене від

water ***works***

II. Vocabulary Comprehension

1. Learn the words and word-combinations to comprehend the text:

construction	будівництво
~ industry	будівельна промисловість
~ work	будівельні роботи
maintenance	догляд, ремонт (поточний)
permanent	постійний, довгочасний
highway	шосе, автострада
water-supply system	система водопостачання
heating ~	~ опалення
civil engineering	цивільне будівництво
to deal with	мати справу з …
structure	споруда
wooden ~	дерев'яна ~
stone ~	кам'яна ~
concrete ~	бетонна ~
reinforced concrete ~	залізобетонна ~
steel ~	сталева ~
block ~	блочна ~
building	споруда, будівля
residential ~	житлова ~
public ~	громадська ~
rural ~	сільська ~

industrial ~	промислова ~
hydro technical ~	гідротехнічна ~
to last	тривати
to carry out	здійснювати
assembly-line principle	принцип монтажу (конвеєр)
qualified workers	кваліфіковані робітники

2. Read the following international words and give their Ukrainian equivalents:

economy, construction, structure, permanent, system, civil, technical, material, community, station, irrigation, drainage, protect.

III. Reading Comprehension

1. Skim the text. Define its general subject and the subject of each paragraph. Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers…, describes…, informs…).

2. Skim the text and answer the following questions:

1. What branch of industry does the text deal with?
2. Does the text consider what civil engineering deal with?
3. Is the classification of structures presented?
4. Are modern industrial methods mentioned?

3. Read the text:

Text A. Construction Industry

1. Construction industry is an important branch of the economy that involves the construction of new and the maintenance of existing buildings and permanent structures such as highways, bridges, canals, and water-supply systems. Civil engineering deals with the technical aspects of designing and constructing various kinds of buildings and structures. Architecture is closely related to construction and occupies a position halfway between civil engineering and art.

2. Structures can be classified according to the materials used into wooden, stone, concrete, reinforced-concrete, steel, block structures, and so on. According to use, permanent structures can be divided into

residential and public buildings (including houses, apartment buildings, government buildings, school buildings, community buildings), rural buildings (houses, barns, community buildings in villages), industrial buildings (factories, plants, electric stations), hydro technical structures (hydroelectric stations, dams, locks, canals, reservoirs, irrigation systems, drainage systems, fish ponds), and transport structures (railroads, highways, airports, pipelines, bridges, tunnels).

3. Today industrial methods are used extensively in construction operations: the work is organized according to the assembly-line principle and is highly mechanized. The production cycle in the construction industry lasts from a few months to a few years. Work is carried out by construction and assembly organizations that have at their command qualified workers and the support of design and research institutions.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because … .
Just the contrary … .
I think … .
To my mind … .

1. Construction industry involves the construction of new buildings.
2. Civil engineering deals with the technical aspects of designing and constructing various kinds of building and structures.
3. Architecture has nothing in common with civil engineering.
4. Structures can be classified according to the materials and to use.
5. Today construction industry uses extensively industrial methods.

5. Study the text and answer the following questions:

1. What does construction industry involve?
2. What does civil engineering deal with?
3. What position does architecture occupy in construction industry?
4. How are structures classified?
5. How are structures classified according to the materials used?
6. How are structures classified according to use?
7. What structures do residential and public (rural, industrial, hydrotechnical, transport) buildings include?
8. What industrial methods are used in construction operations today?

6. For each definition write a word from the text:

1. A whole constructed unit, esp. a building.
2. A permanent fixed structure forming an enclosure and providing protection.
3. The branch of economy delt with construction of new and the maintenance of existing buildings and permanent structures.
4. The art or science of designing and constructing buildings.
5. A person qualified in a branch of engineering, esp. as a professional.
6. The application of science to the design, building, and use of machines, constructions, etc.

7. Render the text in Ukrainian.

IV. Vocabulary and Grammar Activator

1. Study the Table of word-building means given in Grammar Revision.

2. Form words with opposite meaning by adding prefixes *un-, dis-, in-, ir-, il-* **to the proper words:**

regular, advantage, appear, important, usual, adequate, able, direct, possible, probable, productive, significant, limited, natural, relevant.

3. Form the words after the model and translate them into Ukrainian:

a) V + -ment:

to improve, to manage, to treat, to develop, to adjust, to achieve

b) V + -ion (-tion, -ation):

to consume, to distribute, to locate, to inform, to investigate, to form, to irrigate, to observe, to react, to construct, to invent, to restrict, to produce.

c) V + -er (-or):

to consume, to use, to construct, to irrigate, to produce, to build, to control, to perform, to turn, to compute.

d) A + -al:

geologic, economic, electric, mechanic, technologic, scientific.

e) V + -ing:

to design, to manufacture, to build, to understand, to start, to install.

f) **A + -ly:**
direct, usual, virtual, general, frequent.

g) **A + -ity:**
available, arid.

h) **V + -al:**
to remove, to renew, to dispose.

4. Define meanings of the words by their affixes. State what part of speech they indicate:

construct – construction – constructor – constructive; exist – existing; engineer – engineering; design – designing – designer; wood – wooden; resident – residential; irrigate – irrigation; build – building – builder; produce – production – producer – product.

5. Look through the text and give Ukrainian equivalents for the following words and word-combinations:

construction industry, maintenance of existing structures, to occupy the position, according to, apartment houses, government buildings, barns, dams, locks, reservoirs, drainage systems, fish pond, pipelines, tunnels, assembly-line principle.

6. Look through the text and find English equivalents for the following words and word-combinations:

галузь економіки, охоплювати, міст, цивільне будівництво, тісно пов'язаний, гідроелектростанції, високомеханізований, цикл виробництва, тривати, монтажні організації, кваліфіковані робітники, науково-дослідні установи.

7. Look through the text and find the nouns corresponding to the following verbs and translate them into Ukrainian:

to construct, to maintain, to design, to produce, to organize, to irrigate.

8. Translate into English:

1. Одна із важливих галузей економіки є будівельна.
2. Цивільне будівництво має справу з технічними аспектами проектування і будівництва різних видів споруд.
3. Житлові споруди включають будинки, багатоквартирні

будинки, урядові споруди, навчальні заклади тощо.

4. Найважливіші будівельні матеріали – деревина, камінь, бетон, залізобетон, сталь тощо.

5. Сьогодні кваліфіковані працівники використовують індустріальні методи.

V. Talking Assignments

1. Divide the text into logical parts.

2. Express the main idea of each part. Use the following phrases:

– The first (second, third…) part of the text is about …
– It describes (considers, deals with, informs) …
– The author stresses (points out) that …

3. Ask your friend some questions in English about their content. Summarize his/her answers:

– Що включає будівельна промисловість?
– Чим займається цивільне будівництво?
– Чим займається архітектура?
– За яким принципом класифікуються споруди?
– Як класифікуються споруди щодо використаних матеріалів?
– Як класифікуються споруди щодо їхнього використання?
– Що включають житлові(сільські, промислові, гідротехнічні, транспортні) споруди?
– Які методи використовуються в сучасному будівництві?
– Що означають ці методи?

4. Give a short summary of the text.

VI. Listening Comprehension

1. Translate the following words and word-combinations into Ukrainian:

to protect, to dwell, cave, mud wall, brick wall, purpose, to erect, temple, tomb, shelter, owner, conveniences, running water, air conditioning, masonry chimney.

2. Mask the text “From the History of Building” and listen to it attentively:

Text B. From the History of Building

Many thousands of years ago there were no houses such as people live in today. In hot countries people sometimes made their homes in the trees and used leaves to protect themselves from rain or sun. In colder countries they dwelt in caves. Later people left their caves and trees and began to build houses of different materials such as mud, wood or stones.

The first houses were merely shelters built for the purpose of protecting their owners from weather and therefore were very simple – a roof to keep off the rain, and walls to keep out the wind. At the beginning there were no windows. A little later each house had its fireplace and a masonry chimney.

For many years, even centuries, houses were built without any conveniences. There was no water supply, no heating system, no electric light. Very gradually a change came about, especially in cities.

First, there was running water in kitchens, then hot water, later fully equipped bathrooms. The latest thing is air conditioning.

3. Listen to the text again and answer the following questions:

1. Where did people live many thousand years ago?
2. Was there any difference in dwellings in hot and cold countries?
3. Why did people leave their caves and trees?
4. How did the first houses look like?
5. Were there any conveniences in first houses?
6. What are modern conveniences?
7. What were the first building materials?

4. Annotate the text either in English or in Ukrainian. Use the following phrases:

The text is head-lined…
It/the text informs the reader about…
It/the text deals with…
It/the text considers the problem of...
The main idea of the text is…
It/the text describes…
It/the text gives comments on…
It/the text draws reader's attention to…
It is pointed out that…

At the beginning/end…
Further…
The author points out/stresses/informs/considers…
The text is useful and interesting for…

5. Translate the text into Ukrainian.

VII. Written assignment

1. Using text A and B of Unit 4 write a short presentation about the development of construction industry. Summarize all the principal information.

5.

1. Housing.
2. The Engineer and Construction Industry.
3. Passive Voice[1]**.**

I. Grammar Revision

Passive Voice

S + be + V_3

Час (Tense)	Indefinite	Continuous	Perfect
Present	**S + am / is / are + V_3**	**S + am / is / are + being + V_3**	**S + have / has + been + V_3**
Past	**S + was / were + V_3**	**S + was / were + being + V_3**	**S + had + been + V_3**
Future	**S + will / shall + be + V_3**	—	**S + will / shall + have + been + V_3**

[1] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів 1^{x} курсів усіх спеціальностей РДТУ (Частина ІІІ). Рівне: РДТУ, 1999. – С. 18-20.

Modals with the Passive Voice.

		can		
S	**+**	**may**	**+ be +**	**V_3**
		must		

II. Vocabulary Comprehension

1. Learn the words and word-combinations to comprehend the text:

gypsum concrete panel	гіпсоцементна панель
prefabricated blocks	збірні блоки
to assemble on the spot	монтувати на площадці
to take place	відбуватися
under the supervision	під наглядом
foreman	виконроб, старший майстер
bricklayer	муляр
carpenter	тесляр
plasterer	штукатур
plumber	водопровідник
painter	маляр
locksmith	слюсар
glass-cutter	скляр
to make a survey	робити землемірну зйомку
bearing power	опорне навантаження
to stake out	позначати границю віхами
foundation	фундамент
to dig (dug, dug)	копати, викопувати
excavation	виймання ґрунту
basement	основа, фундамент, підвальне приміщення
to prevent from settlement	запобігати зсіданню грунту
framework	коробка, форма крокви
to carry the load	нести навантаження
roof	дах
floor joist	балка для підлоги
beam	балка, брус
girder	балка, брус, поперечина
to make up	утворювати
to space	розставляти, розміщати
course of bricks	горизонтальний ряд кладки

mortar	будівельний розчин
trowel	кельма
solid walls	суцільні стіни
hollow walls	пустотілі стіни
to plaster	штукатурити
to insert a lintel	встановлювати перемичку
opening	отвір
staircase	сходи
stair (step)	східець, щабель
banister (handrail)	поруччя (сходів)
flight of stairs	сходовий марш
to crown	вінчати, завершувати
sheathing	обшивка
rafter	крокви
purlin	лата
truss	кроквяна ферма
shingle	покрівельна дранка
slate	шифер
tile	черепиця
sewer pipe	каналізаційна труба
water pipe	водопровідна труба
faucet (tap)	вентель, кран водопровідний

2. Read the following international words and give their Ukrainian equivalents:

type, gypsum, block, industrial, assemble, process, contact, action, present, stability, proportioned, position, regular, material.

3. Define meanings of the following words by their affixes, state what part of speech they indicate:

house – housing; industry – industrial; paint – painter; cut – cutter; excavate – excavation – excavator; base – basement; nature – natural; lead – leading; connect – connection.

III. Reading Comprehension

1. Skim the text to define its general subject and the subject of each paragraph. Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers…, describes…, informs…).

2. Skim the text again and answer the following questions:

1. Are the most important building materials mentioned?
2. Are main building professions named?
3. Are the most important parts of a building described?

3. Read the text:

Text A. Housing

1. Houses are built of wood, brick, stone, and concrete. A lot of houses are built of prefabricated blocks (prefabs). All the parts of such houses are produced on an industrial scale in factories and assembled on the spot. The building process takes place under the supervision of foremen and engineers. The structure is put up by bricklayers, carpenters, plasterers, plumbers, painters, locksmiths, glass-cutters, etc.

2. In the construction of a house the first step is to make a careful survey of the site and to examine the soil in order to find its bearing power. Next, the building lines are staked out. After this, the foundations are built. The excavation is dug for the basement and then followed by the actual building of the foundation walls below ground level. Then the foundation work is finished by providing anchoring sills. That is the case of a wooden building. In the case of a brick structure, the building of the walls may be directly proceeded with.

3. Foundations are to keep the floors and walls from contact with the soil, to act against the action of the frost and to prevent from settlement. The part upon which the stability of the structure depends is framework. It carries the loads which are imposed on it. To do this work properly and safely the floors, walls, roofs and other parts of the construction must be correctly designed, proportioned, spaced and arranged.

4. The building of a wall consists in laying down courses of bricks and binding them together with mortar. The instrument used by the bricklayer is called a trowel. Walls are constructed to enclose areas and to support the weight of floors and roofs. The walls may be solid and hollow. They may be plastered, then covered with wall-paper or painted. The chief instruments used by the plasterer are the trowel and the float.

5. When doors or windows are to be made, a lintel is usually inserted in the wall above the opening. Storeys are separated by reinforced concrete slabs. The staircase leads to the upper floors. The staircase consists of stairs (steps). When we ascend or descend from step to step we hold on to the banisters (handrails). The steps between two landings are called a flight of stairs

6. The whole structure is crowned by the roof which covers the building and protects it from exposure to the weather. It ties the walls and gives strength to the structure. A complete roof consists of covering, sheathing, rafters, purlins and roof trusses. The covering is the outer or weather resisting coating of the roof. The materials mostly used for the covering are shingles, slate, tiles and iron. After the building of the house is completed there will be need to make a number of connections: sewer and water pipes with faucets (taps). This particular part of the work is undertaken by plumbers, while electrical, gas, and other connections are made by the electricians, etc.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because…
Just the contrary…
I think…
To my mind…

1. Some houses are built of wood, brick, stone and concrete.
2. The structure is put up by engineers.
3. It isn't necessary to examine the soil of the site.
4. The floor carries the loads which are imposed on it.
5. The walls may be solid only.
6. The staircase consists of steps.
7. The whole structure is crowned by the ceiling.
8. A number of connections are made after the building is completed.

5. Study the text and answer the following questions:

1. What is the first step in the construction of a house?
2. Are the building lines staked out after this?
3. Then the foundation is built, isn't it?
4. When does the actual building of the foundation walls begin?

5. Do we provide anchoring sills when the foundation work is finished?

6. Which of the buildings needs anchoring sills?

7. Is the part upon which the stability of the structure depends called the framework?

8. Does it carry the loads which are imposed on it?

9. What do we call the tools used by a bricklayer?

10. Can you name the chief tools used by a plasterer?

11. How are storeys separated?

12. What is the function of the staircase?

13. What is the whole structure crowned by?

14.Will there be a need to make a number of connections after the building of the house is completed?

6. Complete these sentences:

1. In order to build a house a careful ... of the site has to be made and the soil has to be examined in order to ... .

2. When the building lines are staked out, the ... .

3. The foundation work is finished by providing... .

4. Foundations keep the floors and walls from... .

5. The stability of a structure depends on... .

6. The designer decides how ... are to be spaced and arranged.

7. Render the text in Ukrainian.

IV. Vocabulary and Grammar Activator

1. Look through the text and give Ukrainian equivalents for the following words and word-combinations:

to be made from; to be built of; to be produced on an industrial scale; to assemble on the spot; to take place; to be put up; to make a careful survey; on the site; in order to do smth.; to be imposed on; to determine; to be called; consist of; in both cases; weather resisting coating; to be attached; to be completed.

2. Compose sentences with the words and phrases from Ex. 1.

3. Write down:

a) all building materials mentioned in the text;

b) all building professions mentioned in the text;
c) all parts of a house mentioned in the text;
d) all instruments used by builders.

4. Look through the text and find sentences with Passive Voice. Translate them into Ukrainian.

5. Give three forms of the following verbs:

to build; to make; to produce; to put; to examine; to find; to dig; to finish; to keep; to design; to construct; to place; to fasten; to lay; to cover; to undertake; to use.

6. Make the following sentences passive:

1. He is building a new house of wood.
2. They build a lot of houses of prefabricated blocks.
3. This factory produces all parts of houses.
4. They have already dug the excavation for the basement.
5. They finished the foundation work yesterday.
6. The designer determines the size of the walls.
7. Several successive layers separate storeys.
8. They will use tiles for the covering.
9. Plumbers and electricians undertake the particular part of the work.
10. The designer must proportion all parts of the construction correctly.

7. Write questions using the passive:

1. Houses are built of wood, brick, etc. **(What ... of?)**
2. A lot of houses were built of mud in ancient times. **(When?)**
3. This structure will be designed carefully. **(How?)**
4. The walls in the room have been covered with wall-paper. **(What … with?)**
5. A nail is being driven in through the boards into each joist. **(What … through?)**

8. Complete the sentences using one of the verbs in the correct passive form:

call	build (2)	finish	stake out
damage	undertake	work out	support
protect			

1. The roof of the building … in a storm a few days ago.
2. The details of summer cottages … by architects.
3. This part of the work … usually … by electricians.
4. The sheathing … by the inclined beams.
5. The building … from exposure to the weather by the roof.
6. The steps between two landings … a flight of stairs.
7. In this area several houses are located, that … of light panels.
8. Last week the foundation work … by providing anchoring sills.
9. The foundations … after the building lines … .

V. Talking Assignments

1. Divide the text into logical parts.

2. Express the main idea of each part. Use the following phrases:

– The first (second, third …) part of the text is about …
– It describes (considers, deals with, informs) …
– The author stresses (points out) that …

3. Ask your friend questions in English about their content. Summarize his/her answers:

– Які матеріали використовуються в будівництві сьогодні?
– Які спеціалісти беруть участь у будівництві?
– Що є першим кроком у будівництві?
– Яке призначення фундаменту?
– Як зводяться стіни? Яке їхнє призначення?
– Що є необхідним при будівництві 2х, 3х,…поверхового будинку?
– Коли зводять дах? Яка його функція?
– Чим закінчується будівництво?

4. Say in one or two sentences what the following people do:

1. a foreman; 2. an engineer; 3. a bricklayer; 4. a carpenter; 5. a plasterer; 6. a plumber; 7. a painter; 8. a locksmith; 9. a glass-cutter; 10. a builder; 11. a designer; 12. a roofer; 13. an electrician.

5. Ask your friend if she/he knows the main steps in the construction of a house:

1. What is the construction of a house begun with?

2. When is the foundation built?
3. What takes place when the foundation work is finished?
4. When does the building of the walls begin?
5. When is the lintel inserted in the wall above the opening?
6. How are the storeys separated?
7. What is the purpose of a staircase?
8. What crowns the whole structure?
9. When are connections made?

6. Comment your friend's answers. Do you agree with him/her or not? If not, say why. Was she/he right? Express your opinion:

– As far as I know … ;
– I must confess … ;
– If I am not mistaken … ;
– Frankly speaking … ;
– I wonder … ;
– I must disappoint you … ;
– I agree with (to) … .

7. Name all parts of a house. Tell your friends about their functions and the materials they are made from:

Example: – A framework is … .
– It carries … .
– … make up a framework..
– … depends upon framework.

(foundation; floors; walls; roofs; doors; windows; staircase).

8. You are on an excursion to the construction site. Ask the foreman about the house is being built. Discuss the building process:

– Який це буде будинок?
– Які будівельні матеріали Ви збираєтеся використовувати?
– Чи була поведена зйомка?
– Чи залежить фундамент від грунту?
– Скільки поверхів (квартир) буде мати майбутній будинок?
– Які новітні технології Ви застосовуєте?
– Яка буде покрівля?
– Яка вартість будівлі?
– Коли будівля буде пущена в експлуатацію?

9. Summarize the foreman's answers. Present your summaries to the class and choose the summary that is the best.

10. Give a short summary of the text.

VI. Listening Comprehension

1. Translate the following words and word-combinations into Ukrainian:

cost; to influence; specifications; to give a careful consideration; requirements; to increase; commensurate benefit; to eliminate; ultimate decisions; reasonable knowledge; to reduce costs; to refrain from.

2. Mask the text "The Engineer and Construction Industry" and listen to it attentively:

Text B. The Engineer and Construction Industry

The cost of a project is influenced by the requirements of the design and the specifications. Prior to completing the final design the engineer should give careful consideration to the methods and equipment which may be used to construct the project. Requirements which increase the cost without producing commensurate benefits should be eliminated. The ultimate decisions of the engineer should be based on a reasonable knowledge of construction methods and costs.

The following are indicative of methods which an engineer may use to reduce the costs of construction:

1. Design concrete structures with as many duplicate members as practical in order to permit the reuse of forms without rebuilding.
2. Simplify the design of the structure where possible.
3. Design for the use of cost-saving equipment and methods.
4. Eliminate unnecessary special construction requirements.
5. Design to reduce the required labour to a minimum.
6. Specify a quality of workmanship that is consistent with the quality of the project.
7. Furnish adequate foundation information where possible.
8. Refrain from requiring the contractor to assume the responsibility for information that should be furnished by the engineer or for adequacy of design.
9. Use local materials when they are satisfactory.
10. Use standardized specifications, with which the contractors are familiar, where possible.

3. Listen to the text again and answer the following questions:

1. What is the cost of a project influenced by?
2. What should the engineer give careful consideration to?
3. What are the ultimate decisions of the engineer based on?
4. How many indicative methods are offered to reduce the costs of a construction?
5. How do you understand each of these methods? Give your comments.

4. Annotate the text either in English or in Ukrainian. Use the following phrases:

The text is head-lined…
It/the text informs the reader about…
It/the text deals with…
It/the text considers the problem of...
The main idea of the text is…
It/the text describes…
It/the text gives comments on…
It/the text draws reader's attention to…
It is pointed out that…
At the beginning/end…
Further…
The author points out/stresses/informs/considers…
The text is useful and interesting for…

5. Translate the text into Ukrainian.

VII. Written assignment

1. Using text A and B of Unit 5 write a short presentation about the building of a house and its costs. Interview each other in pairs. Get ready to present this information.

6. 1. Types of Buildings. 2. Bearing Wall and Skeleton Frame. 3. Modal Verbs[1].

I. Grammar Revision

Modal Verbs

В англійській мові є група дієслів **/can, may, must, should, need, have to..., be to.../**, які називаються модальними. Вони не мають усіх основних форм властивих іншим дієсловам: і тому називаються недостатніми (Defective Verbs). Модальні дієслова не вживаються самостійно, а лише в сполучені з інфінітивом іншого дієслова.

Модальні дієслова не виражають дії або стану, а лише можливість, необхідність, бажаність, ймовірність, здатність виконання дії, позначеної інфінітивом.

Modal Verbs + have (done)

could have (done) is used to say that we had the ability or the opportuning to do smth. but did not do it.

*Eg.: We **could have gone** to the cinema last night but we decided to stay at home.*

couldn't have (done) is used to say that you wouldn't have been able to do it if you had wanted or tried to do it.

*Eg.: The football match was cancelled last week. Tom **couldn't have played** anyway because he was ill.*

must have (done) is used to express supposition.

*Eg.: The phone rang but I didn't hear it. I **must have been** asleep.*

needn't have (done) is used to say that someone did smth. but it wasn't necessary.

*Eg.: Ann bought some eggs, but at home she found plenty of eggs. So she **needn't have bought** any eggs.*

shouldn't have (done) is used to say that someone did a wrong thing.

*Eg.: I'm feeling sick. I **shouldn't have eaten** so much chocolate.*

should have (done) is used to say that someone didn't do it, but it would have been the right thing to do.

*Eg.: You **should have come** to the party yesterday.*

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[1] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів 1[x] курсів усіх спеціальностей РДТУ (Частина ІІІ). Рівне: РДТУ, 1999. – С. 30-31.

	Modal Verb	Present Indefinite	Past Indefinite	Future Indefinite	Meaning
OBLIGATION	**must V**	He **must** do it. – **Must** he do it? – No, he **mustn't**. (No, he **needn't**).			Необхідність, обов'язок зробити щось.
	have to V	He **has to** do it. He **doesn't have to** do it. **Does** he **have to** do it?	He **had to** do it. He **didn't have to** do it. **Did** he **have to** do it?	He'll **have to** do it. He **will not have to** do it. **Will** he **have to** do it?	Необхідність, обов'язок, що виникає через обставини.
	be to V	He **is to** do it. He **isn't to** do it. **Is** he **to** do it?	He **was to** do it. He **wasn't** do it. **Was** he **to** do it?	He **will be to** do it. He **will not be to** do it. **Will** he **be to** do it?	Необхідність, обов'язок, що виникає через обставини.
	should V	He **should** do it.			Порада.
ABILITY	**can V**	**He can** do it. **He can't** do it. **Can** he do it?	He **could do it.** He **couldn't** do it **Could** he do it? **Could you give me a book?**		Можливість, вміння виконати дію. Ввічлива форма прохання.
	be able to V	He **is able to** do it. He **isn't able to** do. **Is** he **able to** do it?	He **was able to** do it. He w**asn't able to** do it. **Was** he **able to** do it?	He **will be able to** do it. He **will not be able to** do it. **Will** he **be able to** do it?	Бути спроможним щось зробити.
PERMISSION	**may V**	He **may** do it. He **may not** do it. **May** he do it?	**He might** do it.		Дозвіл, прохання виконати дію. Припущення.
	be allowed to V	He **is allowed to** do it. He **isn't allowed** to do it. **Is** he **allowed to do** it?	He **was allowed to do it.** He **wasn't allowed to** do it. **Was** he **allowed to** do it?	He **will be allowed to** do it. He **will not be allowed to** do it. **Will** he **be allowed to** do it?	Дозвіл виконати дію.

II. Vocabulary Comprehension

1. Learn the words and word-combinations to comprehend the text:

framework	ферма, коробка, рама
manner	спосіб
to apply	застосовувати
frame construction	каркасна конструкція
(non) fireproof	(не) вогнетривкий
to sheathe with	обшивати
wood shingles	покрівельна дранка
siding	зовнішня обшивка
to veneer	облицьовувати
stucco	штукатурка
sheet metal	листове залізо
inflammable	легко займистий, гарячий
to designate	визначати, вказувати
fire resistant	стійкий до вогню
incombustible material	негорючий матеріал
to fill in	заповнювати
under floor	нижній поверх
upper floor	верхній поверх
gypsum tile	гіпсовий кахель
girder	балка, брус, опора

2. Read the following international words and give their Ukrainian equivalents:

class, manner, ordinary, exterior, metal, type, material, gypsum, interior, finish.

3. Underline the affixes, state what part of speech they indicate and translate the following words into Ukrainian:

construction, building, devision, wooden, naturally, partitions, inflammable, resistant, structural, weakening, nonfireproof.

III. Reading Comprehension

1. Skim the text first to define its general subject and the subject of each paragraph. Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers…, describes…, informs…).

2. Skim the text again and answer the following questions:

1. What classes of buildings are mentioned in the text?
2. Are all classes described?
3. What classes are buildings divided into according to the manner of construction?

3. Read the text:

Text A. Types of Buildings

1. The majority of buildings may be divided into classes according to the manner of their construction, use, or occupancy. The following devision into classes according to the manner of construction has to be applied.

1. Frame construction.
2. Nonfireproof constructions:
   (a) Ordinary construction;
   (b) Slow-burning construction.
3. Fireproof construction.

2. Frame construction embraces all buildings which must have exterior walls of wooden framework sheathed with wood shingles or siding; veneered with brick, stone, or terra cotta; or covered with stucco or sheet metal. Such buildings naturally have floors and partitions of wood and are considered as comprising the most inflammable type of construction.

3. Nonfireproof construction includes all buildings with exterior walls of masonry but with wood floor construction and partitions. Slow-burning construction designates heavy timber framing designed as far as possible to be fire resistant, the heavy beams and girders of large dimension proving far less inflammable than the slender joists of ordinary construction.

4. Fireproof construction includes all buildings which must be constructed of incombustible material throughout, with floors of iron, steel, or reinforced concrete beams, filled in between with terra cotta or other masonry arches or with concrete slabs. Wood may be used only for under and upper floors, window and door frames, sash, doors, and

interior finish. In buildings of great height the flooring must be of incombustible material and the sash, doors, frames, and interior finish of metal. Wire glass is used in the windows, and all structural and reinforced steel must be surrounded with fireproof material, such as hollow terra cotta and gypsum tile to protect the steel from the weakening effect of great heat.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because…
Just the contrary…
I think…
To my mind…

1. There are several principles of dividing buildings into classes.
2. There are four classes of buildings according to the manner of construction.
3. Frame construction buildings are considered to be the most fireproof.
4. Wood floor and partitions are typical for fireproof construction.
5. Fireproof construction includes all buildings constructed of incombustible materials.
6. In buildings of great height the flooring, doors, frames, and interior finish are made from wood.

5. Study the text and answer the following questions:

1. What kind of buildings does frame construction embrace?
2. Does nonfireproof construction include buildings with exterior walls of wooden framework sheathed with wood shingles?
3. Is heavy timber framing connected in any way with slow-burning construction?
4. Can you say what is meant by ordinary construction?
5. Why is fireproof construction so important to man?
6. Must the flooring be of incombustible material in buildings of great height?
7. Where is wire glass used?

6. For each definition choose a word from the left column:

1. girder	1. a lower surface of a room.
2. fireproof	2. a basic rigid supporting structure of anything.
3. shingle	3. regular, normal, customary, usual.
4. floor	4. taking relatively long time to do a thing.
5. ordinary	5. a rectangular wooden tile used on roofs, spires or walls.
6. slow	6. a large iron or steel beam for bearing loads.
7. frame	7. able to resist fire or great heat.

7. Render the text in Ukrainian.

IV. Vocabulary and Grammar Activator

1. Look through the text and give Ukrainian equivalents for the following words and word-combinations:

majority; occupancy; exterior wall; heavy beam; large dimension; slender joist; reinforced concrete beam; concrete slab; under floor; upper floor; interior finish; weakening effect.

2. Use the words from Ex.1 to finish the following sentences:

1. … and girders of …make construction far less inflammable.
2. … of wooden framework are common for frame construction.
3. … of ordinary construction make the latter more flammable.
4. Wood may be used for … and …floors, window and door frame, sash, doors and … .
5. …. are used in fireproof construction.

3. Look through the text and find antonyms to the following words and translate them into Ukrainian:

minority, fireproof, exterior; nonflammable; light; more; combustible; strengthening.

4. Combine the words from the left and right columns to make word combinations. Translate them into Ukrainian:

frame	effect
exterior	material
wooden	tile
sheet	floor

wood floor	weakening
slow burning	glass
timber	wall
fire	construction
ordinary	framework
fireproof	metal
incombustible	beams
reinforced concrete	floors
concrete	frames
upper/under	terra cotta
door/window	shingles
wire	framing
hollow	resistant
gypsum	slabs

5. Compose sentences with the words and phrases from Ex. 4.

6. Look through the text and find sentences with Modal verbs. Translate them into Ukrainian.

7. Complete these sentences using must, may, can, should, had to, needn't:

1. The majority of buildings … be divided into classes.
2. This building … have exterior walls of wooden framework.
3. You … have sheathed the exterior walls with wood shingles or siding.
4. The exterior walls … be veneered with brick.
5. Frame construction … be considered the most inflammable.
6. Exterior walls of nonfireproof buildings … be masonry.
7. The designer … know that heavy beams and girders of large dimension are far less inflammable.
8. The engineer … have used wood partitions in this construction.
9. This building is rather high. The flooring … be of incombustible material.
10. You were wrong. You … use wire glass in the windows.

8. Make the sentences from Ex.7 interrogative. Start questions with:

1. How …? 2. What …? 3. What …? 4. What …? 5. Why …?
6. What …? 7. What …? 8. Who …? 9. Why …? 10. Why …?

V. Talking Assignments

1. Divide the text into logical parts.

2. Express the main idea of each part. Use the following phrases:

– The first (second, third …) part of the text is about …
– It describes (considers, deals with, informs) …
– The author stresses (points out) that …

3. Ask your friend some questions in English about their content. Summarize his/her answers:

– На які класи може ділитися більшість споруд?
– Як діляться споруди за способом будівництва?
– Які споруди мають каркасну конструкцію?
– Який основний недолік каркасної конструкції?
– Які споруди є не вогнетривкими?
– Які конструкції є вогнетривкими?
– Які будівельні матеріали використовуються для останніх?

4. Name all building materials mentioned in the text. Tell your friends in what constructions they are used.

5. Give a short summary of the text. Present summaries to the class and choose the summary that is the best.

VI. Listening Comprehension

1. Translate the following words and word-combinations into Ukrainian:

bearing wall, skeleton frame, the earliest days, loaded floor, in turn, to transmit the load, foundation, sufficient thickness, excessive, structural steel, to occur, required interval, storey level.

2. Mask the text "Bearing Wall and Skeleton Frame" and listen to it attentively:

Text B. Bearing Wall and Skeleton Frame

From the point of view of method of construction buildings may be divided into the following groups:

1. Bearing wall construction;
2. Skeleton frame construction.

Bearing wall construction has been the method of structural design employed from the earliest days. By this method the loaded floor and roof beams rest upon the exterior and interior walls, which in turn transmit the loads to the foundation. It is evident that the walls must be of sufficient thickness to carry the loads as well as their own weight; consequently, as the height of buildings increased the required thickness of the walls and the weights brought upon the foundations became excessive and uneconomical.

Skeleton frame construction has been made possible by the development of structural steel and later of reinforced concrete. According to this method the loaded floor and roof beams rest upon girders running between the columns. The columns are placed along the buildings and are known as exterior or wall columns: they also occur at required intervals within the body of the building, in which case they are called interior columns. A framework is thereby formed, the walls being carried upon the wall girders at each storey level. The walls are consequently mere enclosures bearing no weight and are of the same thickness on all storeys. The columns transmit the loads to the foundations.

3. Listen to the text again and answer the following questions:

1. What groups may buildings be divided into from the point of view of method of construction?
2. Is bearing wall construction an old method of structural design?
3. Do the loaded floor and roof beams rest upon the exterior and interior walls by this method?
4. Are those loads in turn transmitted to the foundation?
5. Why must the walls be of sufficient thickness?
6. What happened as the height of buildings increased?
7. Are structural steel and reinforced concrete used in skeleton frame construction?
8. What do the loaded floor and roof beams rest upon according to this method?
9. Can you explain the difference between exterior and interior columns?
10. How do you explain the fact that the walls are of the same thickness on all storeys in skeleton frame construction?

4. Brainstorming. In small groups of 3 or 4 students discuss formulated answers.

5. Annotate the text either in English or in Ukrainian. Use the following phrases:

The text is head-lined…
It/the text informs the reader about…
It/the text deals with…
It/the text considers the problem of...
The main idea of the text is…
It/the text describes…
It/the text gives comments on…
It/the text draws reader's attention to…
It is pointed out that…
At the beginning/end…
Further…
The author points out/stresses/informs/considers…
The text is useful and interesting for…

6. Translate the text into Ukrainian.

VII. Written assignment

1. Using text A and B of Unit 6 write a presentation about types of buildings from the point of view of the method and the manner of construction.

Test № 2 (Units 4,5,6).

Test your professional, socio-cultural and language competences.
Mark the correct variant.

1. Construction industry is an … branch of the economy that involves the construction of new and the maintenance of existing buildings and permanent structures.

1. difficult; *2. significant;* *3. important.*

2. Architecture is closely related to construction and occupies a position halfway between civil engineering and … .

1. technology; *2. art;* *3. music.*

3. According to use, permanent structures can be divided into … and public building.

1. school; *2. community;* *3. residential.*

4. The noun corresponding to the verb *to design* is a … .
1. builder; *2. designer;* *3. constructor.*
5. Many thousands of years ago in colder counties people dwelt in … .
1. trees; *2. caves;* *3. houses.*
6. The first houses were merely shelters and there were no … .
1. doors; *2. windows;* *3. roof.*
7. A lot of houses are built of prefabricated blocks which are called … .
1. bricks; *2. prefabs;* *3. stones.*
8. In order to build a house a careful … of the site has to be made.
1. examination; *2. survey;* *3. structure.*
9. The steps between two landings are called … .
1. a flight of stairs; *2. handrails;* *3. banisters.*
10. The whole structure is crowned by the … which covers the building and protects it from exposure to the weather.
1. roof; *2. floor;* *3. door.*
11. The building of a wall consists in laying down courses of bricks and binding them together with … .
1. mortar; *2. concrete;* *3. sand.*
12. Mark English equivalent for "виконроб".
1. carpenter; *2. locksmith;* *3. foreman.*
13. The majority of building … be divided into classes.
1. can; *2. may;* *3. needn't.*
14. The building is rather high. The flooring … be of incombustible materials.
1. must; *2. should;* *3. can.*
15. From the point of view of method of construction buildings may be divided into … groups.
1. 2; *2. 3;* *3. 4.*
16. The columns are placed along the buildings and are known as … or wall columns.
1. exterior; *2. interior;* *3. high.*
17. It is evident that the walls must be of … thickness to carry the loads as well as their own weight.
1. important; *2. sufficient;* *3. efficient.*
18. The English equivalents for "штукатурка" is … .
1. siding; *2. stucco;* *3. sheet metal.*
19. Egyptian pyramids are made of … .
1. stone; *2. wood;* *3. bricks.*

20. The English for “бетонник” is … .

1. concrete layer; *2. paper hanger;* *3. glazier.*

21. The English for the name of speciality “міське будівництво і господарство” is … .

1. town building and bard;

2. town planning and development;

3. city construction and management.

22. Nowadays very tall and huge buildings are made of … .

1. steel and concrete; *2. bricks;* *3. stone.*

23. The English for “головний інженер” is … .

1. steeplejack; *2. a chief engineer;*

3. a safety engineer.

24. The English for “фундамент” is … .

1. base; *2. basis;* *3. foundation.*

25. While choosing a material for construction, the civil engineer must consider … .

1. cost of materials; *2. physical properties of materials;*

3. availability of materials.

26. … was one of the first building materials.

1. timber; *2. concrete;*

3. portland cement.

27. Brick-building has been popular for many hundreds of years because … .

1. of a brick’s shape; *2. of its strength;*

3. of a brick’s shape and convenient size.

28. The cheapest building material is … .

1. wood; *2. bricks;* *3. concrete.*

29. The English for “начальник будівництва” is … .

1. building surveyor; *2. brick layer;*

3. construction site chief.

30. The English for “залізобетон” is … .

1. precast concrete; *2. light concrete;*

3. reinforced concrete.

7. 1. The Most Important Building Materials.
2. How Materials Influence the Schools of Architecture.
3. Sequence of Tenses[1].

I. Grammar Revision

S e q u e n c e o f T e n s e s

$S_1 + V_1$	**(that)**	**$+ S_2 +$**	**Present/Past/Future Indefinite** **Present/Past/Future Continuous** **Present/Past/Future Perfect**

$S_1 + V_2$	**(that)**	**$+ S_2 +$**	**Past Indefinite / Continuous**
			Past Perfect
			Future-in-the-Past

$S_1 + V_2$	**what** **where** **if** **whether**	**$+ S_2 +$**	**Past Indefinite** **Past Continuous** **Past Perfect** **Future-in-the-Past**

Вказівні займенники й прислівники часу в прямій мові заміняються в непрямій мові відповідно змісту таким чином:

this, these	→	that, those
now	→	then
today	→	that day
tomorrow	→	the next day
the day after tomorrow	→	two days later
yesterday	→	the day before
the day before yesterday	→	two days before
last week / year	→	the previous week / year
ago	→	before
next year	→	the next year, the following year
here	→	there

[1] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів 1^{x} курсів усіх спеціальностей РДТУ (Частина ІІІ). Рівне: РДТУ, 1999. – С. 26-29.

II. Vocabulary Comprehension

1. Learn these words and word-combinations to comprehend the text:

to erect	будувати, споруджувати
to project	проектувати
designer	проектувальник
choice of materials	вибір матеріалів
to consider	брати до уваги
availability	наявність
cost	вартість
timber	лісоматеріали
concrete	бетон
cast-in-place concrete	монолітний бетон
precast concrete	збірний бетон
dense concrete	важкий бетон
lightweight concrete	легкий бетон
reinforced concrete	залізобетон
durable	міцний
fire-proof	вогнетривкий
decline	занепад
portland cement	портланд цемент
compressive strength	міцність на стиск
prefabricated elements	збірні елементи
load	навантаження
heat conductivity	теплопровідність
hydraulic binders	гідравлічна зв'язувальна речовина
building site	будівельний майданчик
to place in moulds	розміщати в опалубку (для бетону)
working conditions	умови праці
hard winter	сувора зима

2. Read the following international words and give their Ukrainian equivalents:

type, industrial, project, designer, select, adapt, effective, civil, factor, natural, hydraulic, antiquity, civilized.

3. Define meanings of the following words by their affixes:

industry – industrial; project – projecting; economy – economical; available – availability; construct – constructional; conduct – conductivity; improve – improvement; bind – binder; apply – application; considerable – considerably; install – instalation.

III. Reading Comprehension

1. Skim the text first to define its general subject and the subject of each paragraph .Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers…, describes…, informs…).

2. Skim the text again and answer the following questions:

1. Is this text about the main types of buildings?
2. Does the author mention the main factors which influence the choice of materials?
3. Does the author name the main building materials?
4. Does the author describe a precast concrete plant?

3. Read the text:

Text A. The Most Important Building Materials

1. All the buildings erected nowadays are of two main types: they are intended either for housing or industrial purposes. While projecting any of them a designer must be able to select and adapt such materials of construction that will give the most effective result by the most economical means. To make his choice a civil engineer must consider many factors: availability, cost, physical properties of materials being the most important. Which material can be used to the best advantage for a particular part of building, depends as well on the kind of load to which it is subjected and on the shape of the part.

2. At present the main building materials are considered to be timber, stone, brick, concrete, steel, light metals, glass and plastics. Timber was one of the first materials used by man for constructional purposes. The buildings made of stone or brick are durable and fire-proof, they have poor heat conductivity.

3. Portland cement was produced more than a century ago. From the time of its first production there was a steady and gradual improvement

in its compressive strength.

4. Concrete made with natural hydraulic binders was used in antiquity, particularly by the Romans. After the decline of the Roman Empire the art of making concrete has been forgotten, and the revival came much later.

5. Reinforced concrete is hardly 100 years old but its practical application in building began 90 years ago. Today reinforced concrete is used in all civilized-countries as one of the most important building materials. One of the properties of concrete is its compressive strength.

6. Cast-in-place concrete is mixed and placed on the building site. Precast concrete is produced in a factory and used for the production of prefabricated elements. Usually they are made of dense concrete but in recent years the use of lightweight concrete has increased considerably. A precast concrete plant consists of two parts: a large mixing installation and a casting yard where the plastic concrete mass is placed in moulds. It is an advantage of this method that prefabricated elements of a constantly high quality can be produced to a very high standard of precision. Another important advantage of precast concrete is that the work on the building site is largely replaced by operations in the factory where working conditions are far better. This allows continuous production which is not influenced by weather conditions; therefore this method is of special interest for countries with long hard winters.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because…
Just the contrary…
I think…
To my mind…

1. All buildings can be divided into two main types.
2. To choose a proper material a civil engineer must consider many factors.
3. Concrete is the first building material.
4. Portland cement was produced more than two hundred years ago.
5. One of the properties of brick is its compressive strength.
6. Precast concrete is mixed and placed on the building site.
7. Cast-in-place concrete is produced in a factory.

5. Study the text and answer the following questions:

1. What must a designer be able to do while projecting any of the buildings?
2. What factors of materials are taken into account?
3. What are the main building materials?
4. Which of the building materials was the first to be used for construction purposes?
5. Which of the building materials was used by the Romans?
6. What is the difference between cast-in-place and precast concrete?
7. What are the advantages of precast concrete?

6. For each definition write a word from the text:

1. An engineer who designs or maintains different constructions.
2. Powdery substance made by calcining lime and clay, mixed with water to form mortar.
3. A composition of gravel, sand, cement, and water, used for building.
4. A small, usually rectangular, block of fired or sundried clay, used in building.
5. Wood prepared for building.

7. Render the text in Ukrainian.

IV. Vocabulary and Grammar Activator

1. Study the text and give Ukrainian equivalents for the following words and word-combinations:

to select and adapt; the most effective result; the most economical means; to cosider many factors; availability; depend on; to be subjected to load; to use for constructional purposes; durable; fire-proof; poor heat conductivity; compressive strength; hydraulic binders; practical application; building site; mixing installation; casting yard; high standard of precision.

2. Study the text and give English equivalents for the following words and word-combinations:

зробити вибір; проектувальник повинен бути здатним; брати до уваги; форма; лісоматеріали; цегла; легкі метали; пластмаса; практичне застосування; цивілізовані країни; властивості; завод

збірного бетону; особлива зацікавленість (у чомусь).

3. Study the text and find the nouns corresponding to the following verbs and translate them into Ukrainian:

to build; to design; to construct; to conduct; to produce; to improve; to apply; to install; to operate.

4. Give sentences in English using the following words and word-combinations:

1. зводити споруди; 2. матеріали, які дадуть найкращий результат з найменшими затратами; 3. брати до уваги багато факторів; 4. основні будівельні матеріали; 5. найстаріший будівельний матеріал; 6. міцний та вогнетривкий; 7. цемент; 8. бетон; 9. залізобетон; 10. монолітний бетон; 11. збірний бетон.

5. Change direct speech into indirect speech. Translate the sentences into Ukrainian:

1. The architect said: "All the buildings erected today are of two main types'".

2. The civil engineer stressed: "These materials will give the most efective result by the most economical means".

3. He remarked: "Portland cement was produced more than a century ago'".

4. The students asked: "What are the most important building materails?"

5. The professor pointed out: "One of the properties of concrete is its compressive etrength".

6. Yesterday you attended the lecture on building materials. Here are some of the things the professor said to you:

1. All the buildings are intended either for housing or industial purposes.
2. A civil engineer has to consider many factors.
3. Timber was one of the first building materials.
4. Concrete was used in antiquity.
5. Reinforced concrete is hardly 100 years old.
6. Cast-in-place concrete is mixed and placed on the building site.
7. A precast concrete plant consists of two parts.
8. Light weight concrete is being widely used today.
9. Materials influence the schools of architecture.

10. The result of segregation will be a concrete of poor quality.

Later that day you tell a friend of yours what the professor said. Use indirect speech:

1. The professor said that all buildings were intended either for housing or industrial purposes.

2. He said that ...

7. You attended the seminar on building materials. The professor asked you a lot of questions:

1. What are the main types of buildings?
2. When will materials be the most effective?
3. What does the choice of materials depend on?
4. When was Portland cement produced?
5. Are buildings made of stone and brick durable?
6. Does precast concrete plant consist of two or three parts?
7. What country was concrete used in?
8. Does a civil enginner consider many factors choosing building materials?

Now you tell another student what the professor asked? Use indirect speech:

1. He asked us what the main types of buildings were.

2. He asked us ...

V. Talking Assignments

1. Divide the text into logical parts.

2. Express the main idea of each part. Use the following phrases:

– The first (second, third …) part of the text is about …
– It describes (considers, deals with, informs) …
– The author stresses (points out) that …

3. Ask your friend some questions in English about their content. Summarize his/her answers:

– Чому вибір матеріалів дуже важливий при будівництві всіх видів споруд?
– Які будівельні матеріали найбільш поширені сьогодні?
– Який будівельний матеріал був одним з перших?
– Які властивості мають споруди з каменю та цегли?
– Коли з'явився цемент?

– Хто в будівництві використовував бетон?

– Який будівельний матеріал є найважливішим сьогодні та які його властивості?

– Яка різниця між монолітним і збірним бетоном?

– З чого складається завод по виробництву збірного бетону?

– Які переваги елементів із збірного бетону?

4. Describe the procedure of making precast concrete elements. Use the following key words:

precast concrete; to be produced; prefabricated elements; to be made of; dense concrete; lightweight concrete; to consist of; mixing installation; casting yard; to be placed in moulds; high quality; high standard of precision; working conditions; continuous production.

5. Project work. Work in groups of three or four. Discuss and summarize the advantages and disadvantages of the most important building materials used nowadays. Use the following phrases:

Opening discussion:	As I see it…
	If you ask me…
	I'd say that…
	I couldn't agree…
	I sometimes think…
	Don't you agree that…
Promoting discussion:	That's good point…
	I see what you mean…but sorry…
	Let me explain that…
	I'm not sure I quite agree with you here…
	That's just what I was thinking about…
Misunderstanding:	I didn't quite follow what you are saying…
	I don't quite see what you mean…
	Sorry, let me explain what I mean…

6. Give a short summary of the text.

VI. Listening Comprehension

1. Translate the following words and word-combinations into Ukrainian:

influence; to abound; less pretentious dwellings; to span the areas; arch; dome; to come into being; marble; beam; to obtain.

2. Mask the text "How Materials Influence the Schools of Architecture" and listen to it attentively:

Text B. How Materials Influence the Schools of Architecture

It is of interest to note briefly the influence of materials the schools of architecture. Where clay abounded, as in Egypt sun-dried bricks were easily and cheaply made. Stone was also obtainable, and because of its durability it became the material of the temples and palaces; the less pretentious dwellings were built in bricks. In Mesopotamia large brick buildings were constructed, and, in the absence of stone and wood to span their areas, the arch and dome came into being.

Greece possessed perfect marble for columns, and beams and the arch and dome received little attention. A fortunate combination **of** lime, limestone, clay, and pozzuolana gave Rome stone and cement, and the great mass of her structures is largely due to the union of stone, brick, strong mortar, and concrete. In Northern Europe, Switzerland and Russia where forests abounded and other materials were difficult to obtain, wooden architecture was characteristic for buildings of all types.

3. Listen to the text again and answer the following questions:

1. Why did the Egyptians build their temples and palaces from brick and stone?
2. Why did the arch and dome come into being in Mesopotamia?
3. Why did the arch and dome receive little attention in Greece?
4. What materials were structures in ancient Rome built from?
5. What material was widely used in Nothern Europe, Switzerland and Russia?

4. Annotate the text either in English or in Ukrainian. Use the following phrases:

The text is head-lined ...
It informs the reader about...
It deals with ...
The text considerds the problem of...
The main idea of the text is ...
The text describes ...
It gives comments on …
It draws reader's attention to ...
It is pointed out that …

At the beginning / end …
Further …
The author points out / stresses / informs / considers …
The text is useful and interesting for …

5. Translate the text into Ukrainian.

VII. Written assignment

1. Using texts A and B of Unit 7 write a presentation about the most important building materials and their influence on the schools of architecture.

8.

1. Brick.
2. Silicate Industry.
3. The Infinitive. The Infinitive Constructions[1]. Constructions[1].

I. Grammar Revision

The Infinitive /інфінітив/

Інфінітив = неозначена форма дієслова в українській мові:

to read	—	читати, прочитати;
to write	—	писати, написати;
to help	—	допомагати, допомогти.

Інфінітив – це неозначена форма дієслова, яка називає дію безвідносно до часу, особи і числа. Має властивості як іменника, так і дієслова.

1) Як іменник інфінітив може бути:

1. підметом –

To read a lot is very useful.	Багато читати корисно.

2. додатком –

I want **to read** this book.	Я хочу прочитати цю книгу.

3. частиною присудка –

His task is **to read** this book.	Його завдання – прочитати цю книгу.

[1] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів II[x] курсів усіх спеціальностей РДТУ (Частина IV). Рівне: РДТУ, 1999. – С. 5-18.

2) Як дієслово інфінітив може:

1. мати при собі додаток –

I told him **to post the letter**. — Я сказав йому відправити листа.

2. визначатися прислівником –

I asked him **to speak slowly**. — Я попросив його говорити повільно.

В науково-технічній літературі широко використовується розщеплений інфінітив \split infinitive\ типу **to + adv. +v.**, наприклад:

to clealy understand — чітко розуміти;

to fully realize — повністю усвідомлювати.

3. мати форму часу, активного та пасивного стану.

*Відсутність частки **to** перед інфінітивом:*

1. Якщо в реченні є два інфінітиви, з'єднані сполучником **and, or, except, but, than.**

*Eg.: I'd like **to lie down** and **go** to sleep.*

*I'll **do** anything but **work** on a farm.*

2. Після модальних дієслів **can, may, must, shall, should, will, would.**

*Eg.: I **must go** on.*

***Can** you **help** me?*

3. Після виразів **had better, would sooner, would rather.**

*Eg.: You **had better go** back to your sisters.*

***I'd rather not talk** about these things.*

4. Після дієслів **let, make, see, hear, feel, watch, notice, help,.**

*Eg.: I didn't **see** you **come** in.*

*She **lets** her children **stay up** very late.*

5. **Why (not) –** для висловлення поради чи пропозиції**.**

*Eg.: **Why not take** a holiday.*

***Why not let** me **lend** you some money?*

6. **Do –** у підрядному реченні, яке пояснює точне значення **do** головного речення.

*Eg.: All I **did** was **(to) give** him a little push.*

*What a fire-door **does** is **(to) delay** the spread of a fire long enough for people to get out.*

Форми інфінітива та їх комунікативні значення.

	Indefinite		Continuous	Perfect		Perfect- continuous
Форми	Active	Passive	Active	Active	Passive	Active
	to help	**to be helped**	**to be helping**	**to have helped**	**to have been helped**	**to have been helping**
Приклади	I am glad **to help** you. Я радий **допомогти** вам.	I am glad **to be helped**. Я радий, що мені **допомагають**.	I am glad **to be helping** you. Я радий, що **допомагаю** вам (зараз).	I am glad **to have helped** you. Я радий, що **допоміг** вам.	I am glad **to have been helped**. Я радий, що мені **допомогли**.	I am glad **to have been helping** you for many years. Я радий, що **допомагаю** вам багато років.
	I was glad **to help** you. Я був радий **допомогти** вам.	I was glad **to be helped**. Я був радий, що мені **допомагають**.	I was glad **to be helping** you. Я був радий, що **допомагав** вам (тоді).	I was glad **to have helped** you. Я радий, що **допоміг** вам.	I was glad **to have been helped**. Я радий, що мені **допомогли**.	I was glad **to have been helping** you for many years. Я був радий, що **допомагаю** вам багато років.
	I must **help** you. Я повинен **допомогти** вам.	I must **be helped**. Мені треба **допомогти**.	Father: Where is Pete? Mary: He must **be helping** mother in the garden. Напевно, він **допомагає** матері в садку (зараз).	Father: Has anybody helped mother? Mary: Pete must **have helped** her.. Напевно, Піт **допоміг** їй.	Father: Has anybody helped mother? Mary: She must **have been helped**. Напевно, їй **допомогли**.	He must **have been helping** her for many years. Напевно, він **допомагає** їй багато років.
Значення	Називає дію **безвідносну** до часу її виконання, або дію **одночасну** чи **майбутню** по відношенню до дії, вираженої дієсловом в особовій формі.		Називає **тривалу** дію, що відбувається **одночасно** з дією, вираженою дієсловом в особовій формі.	Називає дію, що **передує** дії, вираженій дієсловом в особовій формі.		Називає тривалу дію, що почалась раніше дії, вираженої дієсловом в особовій формі і продовжується й зараз.

Функції інфінітива в реченні.

	Функція	Приклад	Спосіб передачі значення інфінітива українською мовою
1.	Підмет	**To read** a lot is useful. **Читати** багато – корисно.	Неозначеною формою дієслова або (рідше) іменником.
2.	Частина складного присудка	To read a lot is **to know** a lot. Читати багато означає **знати** багато.	Неозначеною формою дієслова.
		We must **win** the game. Ми повинні **виграти** гру.	
		I am going **to enter** the university. Я збираюся **поступати** до університету.	
3.	Додаток	I want **to attend** this lecture. Я хочу **відвідати** цю лекцію.	Неозначеною формою дієслова.
4.	Означення	Who was the first **to come**? Хто **прийшов** першим?	Підрядним означальним реченням або дієсловом в особовій формі (після слів the first, the second, the last, the only, the next…).
		The text **to be translated** is difficult. Текст, **який потрібно перекладати**, важкий.	
5.	Обставина а) мети	You must work hard **to speak** English fluently. Ви повинні наполегливо працювати, **щоб говорити** англійською.	Неозначеною формою дієслова.
		(In order) **to speak** English fluently you must work hard. **Для того, щоб говорити** англійською, ви повинні наполегливо працювати.	
	б) наслідку	I was too young **to think** of such things. Я був занадто молодий, **щоб думати** про такі речі.	

The Infinitive Constructions.

Інфінітивні звороти та їх функції у реченні.

Складний додаток /Complex Object/

Складнопідрядне додаткове речення за своїм значенням адекватне звороту "складний додаток з інфінітивом".

I expect **that he will** come here.	I expect **him to come** here.	Я сподіваюсь, що він прийде сюди.

Зворот "складний додаток" вживається після наступних дієслів і має таку структуру:

S	see, feel, hear, watch, notice, let, make	me you him her it us them student Mary mother	**do**
	want, expect, believe, know, advise, consider, think, like, hate		**to do**
	order, command, ask (for), allow		**to be done**

Наприклад:

I	saw	him	cross the street
Я	бачив,	як він	переходив вулицю.
Mother	wants	Mary	to come in time.
Мама	хоче,	щоб Мері	прийшла вчасно.
We	believe	them	to be honest people.
Ми	віримо,	що вони	чесні люди.
The manager	ordered	the cargo	to be ensured.
Менеджер	наказав,	щоб багаж	був застрахований.

Складний підмет /Complex Subject/

Складно-підрядне речення з головним реченням, вираженим безособовим зворотом типу:

it is said	(кажуть);
it is reported	(повідомляють);
it seems	(здається);
it is likely	(схоже);

можна замінити простим реченням із **“складним підметом”.**

It is said that they know English very well.	They are said to know English very well.	Кажуть, що вони добре знають англійську мову.

Інфінітив в реченнях із “**складним підметом**” може вживатись в різних формах.

He is said to live in Kyiv.	Кажуть, що він живе у Києві.
The water seems to be boiling	Вода, здається кипить.
He was known to have lived in Kyiv.	Відомо, що він жив у Києві.

“**Складний підмет**” вживається, коли:

1. присудок виражений наступними дієсловами в Passive Voice:

S+be+	said, believed, stated, supposed, reported, thought, announced, expected, known, understood, considered, seen, heard.	**+to do**

This plant is known to produce tractors.	Відомо, що цей завод виробляє трактори.
The delegation is reported to have left Kyiv.	Повідомляють, що делегація поїхала з Києва.
He was said to have been travelling about the country a good deal.	Говорили, що він багато подорожував по країні.

2. присудок виражений наступними дієсловами в Active Voice:

S +	seem, appear, prove, happen, chance	**+ to do**

He seems to know English well.	Здається, він добре знає англійську
The weather appears to be improving.	Погода, напевно, покращується.

3. присудок виражений наступними прикметниками:

S + be +	likely, unlikely, certain, sure	**+ to do**

They are likely to come soon.	Схоже, що вони скоро прийдуть.
The delegation is certain to arrive in Kyiv.	Без сумніву, делегація приїде в Київ.

Прийменниковий інфінітивний комплекс
(The for-to-Infinitive –Construction)

Інфінітивний комплекс може вводитися прийменником **for**, і називається **прийменниковим інфінітивним комплексом**.

… for +	noun me you her him us them	**+ to do …**

It's time **for us to go**. Нам пора йти.

Функції прийменникового інфінітивного комплексу

Функція	Приклади	Спосіб передачі значення інфінітива укр. мовою.
1. Складний підмет.	For me to help you is the greatest pleasure. Допомогти тобі – найбільше задоволення для мене.	Інфінітивом.
2. Предикатив	It's for you to decide. Вирішувати це - тобі.	Інфінітивом (з нього і починати переклад)
3.Складний додаток	We waited for the rain to stop. Ми чекали, поки припиниться дощ.	Іменником, складнопідрядним реченням, інфінітивом.
4. Складне означення	Here are some books for you to read. Ось декілька книжок, які ти можеш прочитати.	Складнопідрядним реченням; іменниковим сполученням; у деяких випадках інфінітив зовсім не перекладається.

5. Складна обставина: а) мети	I've closed the window for you not to catch cold. Я зачинив вікно, щоб ти не застудилась.	Складнопідрядним реченням з підрядним мети або наслідку.
б) наслідку	You speak English too fast for me to understand. Ти говориш занадто швидко, щоб я міг зрозуміти.	

II. Vocabulary Comprehension

1. Learn the words and word-combinations to comprehend the text:

brick	цегла
clay	глина
rectangular	прямокутний
to grip	тримати
bricklayer	муляр
shape	форма
ld. (Libra)	фунт
to handle	брати руками, тримати в руках
to burn	випалювати
to dry in the sun	висушувати на сонці
weight	вага, маса
thermal conductivity	теплопровідність
hollow/porous brick	порожниста цегла

2. Read the following international words and give their Ukrainian equivalents:

composition, material, popular, control, position, prevent, protect(ion), texture, thermal, effective, ordinary, modern, primitive, constant, atmospheric, mechanical.

3. Define meanings of the words by their affixes, state what part of speech they indicate. Translate them into Ukrainian:

universal – universally; hard – hardness; construct – construction; practical – practically; general – generally; please – pleasing; economy – economic – economical.

III. Reading Comprehension

1. Skim the text first to define its general subject and the subject of each paragraph. Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers…, describes…, informs…).

2. Skim the text again and answer the following questions:

1. Is this text about stone?
2. Does the author mention how to prevent the skin from rough brick?
3. Is the shape of a brick described?
4. Are different kinds of bricks mentioned?

3. Read the text:

Text A. Brick

1. Today brick is considered to be one of the main building materials. In shape it is a rectangular solid and its weight is from 6 to 9 lb. Bricks generally present a pleasing appearance and can be obtained with various qualities, colours and textures. Being of a high volume weight and high thermal conductivity ordinary brick can not be always used in building practice. There are other kinds of bricks which are more effective: they are light-weight building bricks, hollow or porous bricks. Light-weight building bricks differ from ordinary clay bricks in a lower weight and lower thermal conductivity, and therefore more economical than ordinary bricks.

2. The shape and convenient size of a brick enables a man to grip it with an easy confidence and, because of this, brick-building has been popular for many hundreds of years. The hand of the average man is large enough to take a brick and he is able to handle more than 500 bricks in an eight-hour working day.

3. Brick is a universally used structural material which in modern times is made by pressing clay into blocks and burning them to hardness. Bricks in their most primitive form were not burned, but were hardened by being dried in the sun. Brick probably existed in times of which no record remained.

Since the Middle Ages brick work has been in constant use

everywhere, in every sort of construction and in every architectural style. Good bricks are practically indestructible by fire or atmospheric action and more durable than stone. At the beginning of the 19th century, mechanical processes came into everyday use and by the end of the century had almost entirely replaced the ancient hand-fashioned methods.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because…
Just the contrary…
I think…
To my mind…

1. Brick is made by pressing clay into blocks and burning them.
2. We know when brick appeared.
3. Brick is used in every architectural style.
4. Brick is made by hand.
5. Brick is rectangular in shape.
6. There are different kinds of brick.
7. A bricklayer is able to handle more than 1000 bricks in an eight-hour working day.

5. Study the text and answer the following questions:

1. How is brick made?
2. How was primitive form of brick made?
3. Did brick exist in times of which no record remained?
4. What are the properties of brick?
5. What is the shape of a brick?
6. Are there different kinds of brick?
7. How many bricks is a man able to handle in an eight-hour working day?

6. Render the text in Ukrainian.

IV. Vocabulary and Grammar Activator

1. Study the text and give Ukrainian equivalents for the following words and word-combinations:

to consider; shape; solid; pleasing appearance; texture; high volume weight; ordinary brick; more economical; convenient size; eight-hour working day; at the beginning.

2. Study the text and find English equivalents for the following words and word-combinations:

повністю замінити; древній метод; механічні процеси; постійне використання; архітектурний стиль; незруйнований; існувати; якість; фунт; давати змогу; висока теплопровідність.

3. Complete the following sentences:

1. Brick is universally used in …….. .
2. Brick is made by …….. .
3. Good brick is more durable than …….. .
4. The ancient hand-fashioned methods were replaced by …….. .
5. Brick is ……. in shape.
6. A brick weighs …….. .
7. ……. are more economical than ordinary bricks.

4. Combine the words from the left and right column to make word combinations. Translate them into Ukrainian:

	practice
rectangular	textures
pleasing	colours
various	material
volume	style
thermal	methods
building	brick
ordinary	qualities
architectural	weight
ancient	conductivity
	solid
	appearance

5. Compose sentences with the words and phrases from Ex. 4.

6. Study the text and find sentences with the Infinitive and the Infinitive Constructions. Translate them into Ukrainian.

7. Translate the following sentences into Ukrainian:

1. We know brick to be produced by new methods.
2. I saw the bricklayer practice handling bricks.
4. Brick proved to be of high thermal conductivity.
5. Porous bricks are considered to be more effective.
6. A bricklayer seems to handle more than 500 bricks in an eight-hour working day.
7. Brick appeared to have been used since the Middle Ages.
8. It is for the engineer to decide what building material to be used in this structure.
9. It is necessary to protect fingers from rough bricks.
10. Bricklayers use leather pads to prevent fingers from rough bricks.

V. Talking Assignments

1. Divide the text into logical parts.

2. Express the main idea of each part. Use the following phrases:

– The first (second, third …) part of the text is about …
– It describes (considers, deals with, informs) …
– The author stresses (points out) that …

3. Ask your friend questions in English about their content. Summarize his/her answers:

– Чому цегла вважається одним з найпоширеніших будівельних матеріалів?
– Як виглядає цеглина?
– Які види цегли ви знаєте?
– Чому будівництво з цегли популярне протягом сотень років?
– Як виробляють цеглу зараз? Як її виробляли раніше?

4. Discuss with your friend the advantages of modern brick. Use the following expressions:

Opening discussion:
As I see it…
If you ask me…
I'd say that…
I couldn't agree…
I sometimes think…
Don't you agree that…

Promoting discussion:	That's good point…
	I see what you mean…but sorry…
	Let me explain that…
	I'm not sure I quite agree with you here…
	That's just what I was thinking about…
Misunderstanding:	I didn't quite follow what you are saying…
	I don't quite see what you mean…
	Sorry, let me explain what I mean…

5. Give a short summary of the text.

VI. Listening Comprehension

1. Translate the following words and word-combinations into Ukrainian:

silicon, glass, ceramics, limestone, to embrace, putty, to mould, to ignite, to retain, slaked lime, marl, to roast, kiln, mortar, to harden, to bind, furnace, to cool, viscous, silicate, tamping cement, high alumina, foamed glass.

2. Mask the text "Silicate Industry" and listen to it attentively:

Text B. Silicate Industry

The industry processing the natural compounds of silicon is called the silicate industry. It embraces the production of cement, glass and ceramics.

The production of ceramic goods is considered to be based on the property of clay when mixed with water to form putty from which articles can easily be moulded. When these articles are dried and then baked, that is, ignited at a high temperature, they become hard and their shape, no longer being softened by water.

In this way clay mixed with water and sand is moulded into bricks, which are then dried and baked. The materials used to make silicate bricks are white sand and slaked lime.

Cement Production. Cement is made from limestone and clay, or from their natural mixture marl; the materials roasted in cylindrical rotary kilns are charged into a slowly rotating kiln at its upper end and travel, mixing continuously, towards the lower end, while a current of hot gases, the products of the burning of fuel, flows in the opposite direction. During the period of their movement through the kiln the clay

and the limestone react chemically, and the material emerging from the kiln in lumps of a caked mass is cement, which is then ground.

There are different types of cement: tamping cement for oil and gas wells; high alumina cement, which is very resistant to chemical attack, Portland cement, used in the construction of lightened structures with large spans; blast-furnace slag cement, coloured cement.

When cement is mixed with water, it forms mortar, which hardens, binding various objects, such as bricks or stones, very firmly. It is for this reason that cement is used widely as a binding material in large scale construction, including underwater construction. Cement is the most important component of concrete.

Glass Production. The initial materials for the production of ordinary glass are mainly soda Na_2CO_3, limestone $CaCO_3$, and sand SiO_2. A mixture of these substances is heated in a bath-shaped furnace.

When it cools, the liquid mass of glass does not become hard at once. At first it becomes viscous and readily assumes any shape. This property of glass is used in making various articles out of it.

3. Listen to the text again and answer the following questions:

1. What is the name of the industry processing the natural compounds of silicon?
2. What materials are used for making silicate bricks?
3. What are the initial materials for getting glass?
4. How do we get concrete?
5. What is the difference between cement and concrete?

4. Annotate the text either in English or in Ukrainian. Use the following phrases:

The text is head-lined…
It/the text informs the reader about…
It/the text deals with…
It/the text considers the problem of...
The main idea of the text is…
It/the text describes…
It/the text gives comments on…
It/the text draws reader's attention to…
It is pointed out that…
At the beginning/end…

Further…
The author points out/stresses/informs/considers…
The text is useful and interesting for…

5. Translate the text into Ukrainian.

VII. Written assignment

1. Using text A and B of Unit 8 write a presentation about brick as one of the most important building materials.

9.

1. Concrete.
2. Prestressed Concrete.
3. The Participle. The Participial Constructions[1]**.**

I. Grammar Revision

The Participle /дієприкметник/

Дієприкметник – це неособова форма дієслова, що має властивості дієслова, прикметника та прислівника.

В англійській мові є два дієприкметники:

1. **дієприкметник теперішнього часу (Present Participle або Participle I)**,
2. **дієприкметник минулого часу (Past Participle або Participle II).**

Утворення дієприкметників.

I. Present Participle утворюється за допомогою закінчення **-ing,** яке додається до інфінітива дієслова без частки **to:**

to read reading

1. Якщо інфінітив закінчується німим **-e**, то перед значенням **-ing** воно опускається:

to write writing

2. Якщо інфінітив закінчується однією приголосною буквою, якій передує короткий наголошений голосний звук, то перед закінченням **-ing** кінцева приголосна подвоюється:

to sit sitting

[1] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів II[x] курсів усіх спеціальностей РДТУ (Частина IV). Рівне: РДТУ, 1999. – С. 35-45.

3. Кінцева буква **r** подвоюється, якщо останній склад наголошений і не містить дифтонга:

to prefer preferring

4. Кінцева буква **l** подвоюється, якщо їй передує короткий голосний звук:

to travel travelling

Participle I відповідає українському дієприкметнику активного стану теперішнього часу та дієприслівнику недоконаного виду:

resting — відпочиваючий, відпочиваючи

II. Past Participle правильних дієслів утворюється за допомогою закінчення **-ed,** що додається до інфінітива дієслова без частки **to**, тобто так само, як і стверджувальна форма Past Indefinite цих дієслів:

to ask asked

Past Participle неправильних дієслів утворюється по-різному, і ці форми треба запам'ятати (*III колонка неправильних дієслів*):

to do done
to build built
to write written

Participle II перехідних дієслів відповідає українському пасивному дієприкметнику минулого часу:

dressed — одягнутий
made — зроблений

Participle II деяких неперехідних дієслів відповідає українському дієприкметнику активного стану минулого часу:

to fade — в'янути faded — зів'ялий

Як прикметник **Participle** може бути **означенням** до іменника:

A **broken** cup lay on the table. **Розбита** чашка лежала на столі.

Як прислівник **Participle** служить обставиною, що визначає дію присудка:

He sat at the table **thinking.** Він сидів біля стола **замисливши.**

Як дієслово **Participle** може:

1. мати **додаток**:

He sat at his desk **writing something**.	Він сидів за столом і щось писав.

2. визначатися **прислівником**:

Supported unanimously, the project was approved.	Отримавши одноголосну підтримку, проект було схвалено.

3. мати форми **активного або пасивного** (для перехідних дієслів) стану;
4. мати форми **відносного часу.**

Participles: *interested and interesting, etc.*

To say how we feel about something, we can use the past participles *interested, bored, excited,* etc.

*Eg.: I was very **interested** in the lesson.*
*I didn't enjoy the party because I was **bored**.*

To talk about the person or thing that makes us feel interested, bored, etc, we use present participles (*interesting, boring, exciting,* etc.).

*Eg.: I thought the **lesson** was quite **interesting**.*
*Sheila's **party** was pretty **boring**.*

Форми Participle II та їх комунікативні значення.

Форми	Перехідні дієслова	Неперехідні дієслова
	Past Participle	Past Participle
	passive	active
	asked	**gone**
Приклади	We looked at the **destroyed** bridge. Ми дивилися на **зруйнований** міст. Her father is a doctor **loved** and **respected** by everybody. Її батько-лікар, якого всі **люблять** і **поважають**.	He has already **gone** for a walk. Він уже **пішов** на прогулянку.
Значення	Здебільшого Past Participle виражає дію, що **передує** дії, вираженій присудком речення, але також може виражати дію **одночасну** з дією, вираженою дієсловом присудком, або дію **безвідносну** до часу.	

Форми Participle I та їх комунікативні значення

	Перехідні дієслова				Неперехідні дієслова	
Форми	**Present Participle**		**Perfect Participle**		Present Participle	Perfect Participle
	Active	Passive	Active	Passive	Active	Active
	asking	**being asked**	having asked	**having been asked**	**going**	**having gone**
Приклади	**Reading** English books I wrote out new words. **Читаючи** англійські книжки, я виписував нові слова. The students working here came from Kyiv. Студенти, що працюють тут, прибули з Києва.	**Being invited** to the party she couldn't do this work. Оскільки її **запросили** на вечірку, вона не могла зробити цю роботу.	**Having read** the book, he gave it to his friend. **Прочитавши** книжку, він віддав її другові.	**Having been packed**, the parcel was taken to the post-office. Після того, як посилку **запакували**, її віднесли на пошту.	She is looking at the woman **going** along the street. Вона дивиться на жінку, що **йде** вздовж вулиці.	**Having lived** in Kyiv for many years he knew the city very well. Проживши в Києві багато років, він **знав** місто дуже добре.
Значення	Називає дію, що 1) відбувається **одночасно** з дією, вираженою дієсловом присудком; 2) відноситься до **теперішнього часу**, незалежно від часу дії, вираженої дієсловом-присудком речення; 3) відбувається **безвідносно** до якогось часу; 4) **передує** дії, вираженій присудком.		Називає дію, що **передує** дії, вираженій дієсловом-присудком і перекладається дієприслівником доконаного виду.		Див. комунікативне значення перехідних дієслів.	

Функції Participle I, II в реченні

		Participle I	Participle II
Означення	**ліве**	The **rising** sun was hidden by the clouds. Сонце, що сходило, закрили хмари.	A **broken** cup lay on the table. Розбита чашка лежала на столі
	праве	She saw a women **sitting** in the corner of the room. Вона побачила жінку, що сиділа в кутку кімнати.	They showed us the list of the goods **sold** at the auction. Вони показали нам список товарів, які були продані на аукціоні.
Обставина	**часу**	**Entering** the room, she saw her sister there. Увійшовши до кімнати, вона побачила там свою сестру.	**When praised**, he was ill at ease. Коли його хвалили, він почував себе ніяково.
	причини	**Having been made** 20 years ago, the machine is out of date. Виготовлена 20 років тому, машина зараз застаріла.	**Frightened** by the dog, the child began to cry. Злякавшись собаки, дитина почала плакати.
	способу дії	He sat in the armchair **reading** a newspaper. Він сидів у кріслі, читаючи газету.	**Though wounded**, the soldier did not leave the battle-field. Хоч і поранений, солдат не залишив поля боя.
Частина присудка		*Continuous Tenses* Don't make noise. He's **sleeping**. Не шуміть, він спить.	*Perfect Tenses* I have just **met** him. Я тільки, що зустрів його.
			Passive voice This house was **built** last year. Цей будиник був збудований минулого року.

Дієприкметникові звороти.

В англійській мові дієприкметник, як і інфінітив, утворює синтаксичні звороти з іменниками та займенниками. Дієприкметник входить до складу трьох комплексів: **Складний додаток, Складний підмет та Незалежний дієприкметниковий комплекс**.

Складний додаток /Complex Object/

Зворот "Складний додаток" вживається після наступних дієслів і має таку структуру:

<table>
<tr><td rowspan="2">S</td><td rowspan="2">see
hear
watch
notice
observe
feel
find
consider
understand
want
wish
desire
have
get</td><td>me
you
him
her
it
us
them</td><td>P.I
P.II</td></tr>
<tr><td>student
mary
my coat</td><td>P.II</td></tr>
</table>

Наприклад:

I saw **him crossing** the street[13].	Я бачив, як він переходив вулицю.
I saw **the window broken**.	Я бачив, що вікно розбите.
She considered **Mary deceived**.	Вона вважала Мері обманутою.
She had **her hair done**.	Їй зробили зачіску.

Складний підмет /Complex Subject/

Зворот "Складний підмет" вживається переважно з наступними дієсловами і має таку структуру:

[13] "Складний додаток" з Participle дуже близький за значенням до "Складного додатка" з Infinitive (після дієслів, що означають сприйняття за допомогою органів чуттів). У першому випадку дія виражається як процес, а в другому- констатується факт.

S + be +	seen, heard, felt, watched noticed, observed	**+ P.I**

A plane was heard **flying** high in the sky. Було чути, як високо в небі летів літак.

S + be +	considered believed found	**+P.II**

The work was considered **finished**. Роботу вважали закінченною.

Незалежний дієприкметниковий зворот

/The Absolute Participial Construction/

Якщо іменник у загальному відмінку (або особовий займенник у називному відмінку) виконує роль підмета по відношенню до дієприкметника і не є підметом усього речення, то це – **Незалежний дієприкметниковий зворот**.

Peter coming home from Kyiv, we asked him to tell us about the conference. Коли Петро повернувся із Києва, ми розпитали його про конференцію.

У Незалежному дієприкметниковому звороті можуть вживатися всі форми Participle.

В реченні зворот виконує функції обставини:

а) часу:

The rain having stopped we went home. Коли дощ припинився, ми пішли додому.

б) причини:

It being now pretty late, we went to bed. Оскільки було вже пізно,ми пішли спати.

в) умови:

Weather permitting, we shall start tomorrow. Якщо погода дозволить, ми поїдемо завтра.

г) способу дії: (вводиться прийменником **with**)

He was standing, **with his arms crossed.** Він стояв, схрестивши руки.

Способи перекладу "незалежного дієприкметникового зворота" на українську мову.

"Незалежний дієприкметниковий зворот" перекладається на українську мову:

а) підрядним обставинним реченням:

The weather being fine, they went for a walk.	Так як погода була хорошою, вони пішли на прогулянку.

б) простим реченням, що входить до складносурядного:

We had three lectures, **the last being in physics.**	Ми мали три лекції, остання з фізики.

в) дієприслівниковим зворотом:

Her face smiling, she came into the room.	Усміхаючись, вона увійшла в кімнату.

г) головним реченням в складнопідрядному:

She sat down at the table, **her hands beginning to tremble**.	Коли вона сідала за стіл, її руки починали тремтіти.

II. Vocabulary Comprehension

1. Learn the words and word-combinations to comprehend the text:

artificial	штучний
watertightness	водонепроникність
at minimum cost	при мінімальних затратах
to attain	досягати, добувати
accurate method	точний метод
workability	оброблюваність
to undergo	переносити, піддаватися (чому-небудь)
brittle	крихкий
tensile stresses	розтягуючи напруження
crushed stone	щебінь
slab	плита
thickness	товщина
beam	балка
to fail	руйнуватись, виходити з ладу
disadvantages	недоліки
setting	затвердіння
to eliminate	усувати
prefabricated reinforced concrete elements	збірні залізобетонні елементи

to be subjected to	піддавати (впливу)
bending forces	сили згину (вигину)
to reinforce with bars	армувати стержнями
rigid	твердий, негнучкий
to resist compressive forces	протистояти (не піддаватися) стискуючим силам
insulating value	ізоляційна властивість
to harden	застигати, твердішати

2. Read the following international words and give their Ukrainian equivalents:

conglomerate, gravel, fundamental, minimum, selection, method, proportion, test, characteristic, function, utilize, structure, monolith, ordinary, some, limited, elasticity, combination, popular, thermal, element.

3. Define meanings of the following words by their affixes:

crush – crushed; produce – production; select – selection; frequent – frequently; go – undergo; compress – compression – compressive; limited – unlimited; suit – suitable; durable – durability; advantage – disadvantage.

III. Reading Comprehension

1. Skim the text first to define its general subject and the subject of each paragraph. Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers…, describes…, informs…).

2. Skim the text again and answer the following questions:

1. Is this text about concrete?
2. Are the properties of concrete mentioned?
3. Is the process of concrete production described?
4. Is the process of reinforced concrete described?
5. Are the disadvantages of concrete mentioned?

3. Read the text:

Text A. Concrete

1. There are many important building materials nowadays, concrete being one of them. Concrete may be considered an artificial conglomerate of crushed stone, gravel or similar inert material with a mortar. The fundamental object in proportioning concrete is the production of a durable material of requisite strength, watertightness and other essential properties at minimum cost. To attain these properties careful attention must be given to the selection of cement, aggregate, and water.

2. The most accurate method of measuring proportions is to weigh the required quantities of each material. It is widely used in large building construction, but in small building construction the less accurate method of measuring proportions by volumes being frequently used. Workability and strength are chief control tests made on concrete. To be able to undergo high compressive loads is a specific characteristic of this material.

3. Since concrete is only strong in compression, it will quickly fail if it is used for elements like beams and floor slabs, which are subjected to high bending forces. If it is reinforced with iron or steel bars, however the elastic metal will take the rigid forces, and the rigid concrete will resist the compressive forces. The reinforcing techniques developed the structural possibilities of concrete becoming almost unlimited. In its reinforced form it combines the elasticity of iron and steel with its own initial plasticity and final rigidity, an almost ideal combination of properties that makes it the most suitable of all building materials.

4. Reinforced concrete has become so popular because of its resistance to fire and weather, its durability and great strength under static and dynamic loads. It has, however, a number of disadvantages, low thermal insulating value being one of them. Besides it is very heavy and requires forms in which it must be held until it has hardened, and in winter it must be kept warm during setting.

5. Prefabricated reinforced concrete elements and modern reinforcing methods being used, the above mentioned disadvantages are now being eliminated or at least minimized. Reinforced concrete is used for many types of structures, it being now the main building material for factories, office buildings, power stations, bridges, etc. In recent years it has become the preferred material for housing.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because…
Just the contrary…
I think…
To my mind…

1. Concrete is a natural building material.
2. The main property of concrete is its durability.
3. There are three accurate methods of measuring proportions while making concrete.
4. Concrete will resist compressive forces if it is reinforced.
5. Concrete is an ideal material, it has no disadvantages.
6. Reinforced concrete is used for building of power stations.

5. Study the text and answer the following questions:

1. What is concrete produced of?
2. What are the main properties of concrete?
3. How did reinforced concrete appear?
4. What are the main disadvantages of reinforced concrete?
5. How can the disadvantages of reinforced concrete be eliminated or at least minimized?
6. What types of structures is reinforced concrete used for?

6. For each definition write a word from the text:

1. Composition of gravel, sand, cement, and water, used for building.
2. Produced by human art or effort.
3. A number of things or parts forming a mass.
4. Careful, precise.
5. Strengthen or support, esp. with additional material.
6. Concrete with metal bars or wire embedded to increase its tensile strength.
7. Manufacture sections of (a building, reinforced concrete etc.) prior to their (its) assembly on the site.

7. Render the text in Ukrainian.

IV. Vocabulary and Grammar Activator

1. Study the text and give Ukrainian equivalents for the following words and word-combinations:

artificial conglomerate; crushed stone; similar inert material; fundamental object; requisite strength; essential properties; to attain properties; to give attention to; strength test; to be subjected to high bending forces; final rigidity; modern reinforcing methods.

2. Study the text and find synonyms for the following words:

today, man-made, essential, hard-wearing, precise, perfect, appropriate, aim.

3. Study the text and find antonyms for the following words:

few, natural, maximum, different, careless, the least, more, weak, low, limited, advantages, light, cold, ancient.

4. Use the following affixes to make up new words:

~ly; ~ing; ~tion; ~al; ~ness; ~ful; ~able; un~; dis~.

fundament; proportion; watertight; suit; build; care; wide; quick; advantage; limited; frequent.

5. Study the text and find sentences with the Participle. Translate them into Ukrainian.

6. Translate the following sentences into Ukrainian:

1. When producing concrete we usually use less accurate method by volumes.
2. We saw them mixing crushed stone, gravel with mortar.
3. The large house being built in our street is a new school.
4. The workers left the construction site, the concrete having not been produced.
5. Having been reinforced with iron bass concrete became rather durable.
6. Concrete becomes durable when reinforced.
7. We walked about a little, the architect showing us the construction site.
8. Though built in beautiful surroundings the new dwelling-houses did not satisfy the needs of their inhabitants.

9. About 100 bars have been used, half of them being steel.

10. Having no other material, the workers used waterproof paper for the protection of the fresh concrete.

11. Forms may be made of timber or steel sheets, the latter being preferred to our concrete plant.

12. The external walls are made of sandwich panels with the outer layer made of aluminum.

13. A bridge connecting the two parts of the town will be completed in three years.

14. The reconstruction of the town is now making rapid progress with a new shopping centre being built as one of the main attractions.

7. Translate the following sentences into English:

1. Сучасне будівництво використовує багато будівельних матеріалів, бетон – один з них.

2. Цей майданчик включає вісім 17-поверхових багатоквартирних будинків, при чому кожний має 100 квартир.

3. Балки бувають різної товщини, а найбільш звичайні розміри від 6 до 9 дюймів.

4. Задача цього архітектора – спроектувати новий район міста, а житлові будинки є тільки частина проблеми.

5. Коли проект був закінчений, архітектор показав його своїм колегам.

V. Talking Assignments

1. Divide the text into logical parts.

2. Express the main idea of each part. Use the following phrases:

– The first (second, third …) part of the text is about …
– It describes (considers, deals with, informs) …
– The author stresses (points out) that …

3. Ask your friend some questions in English about their content. Summarize his/her answers:

– Що таке бетон?
– Які основні характеристики бетону?
– Які методи виробництва бетону ви знаєте?
– В яких випадках бетон може руйнуватися?

– Як зміцнюють бетон?
– Які переваги та недоліки залізобетону?
– Де використовуються збірні залізобетонні елементи?

4. Tell your friends about the ways of concrete production. Use the key words:

concrete; important; artificial conglomerate; crushed stone; gravel; mortar; production; selection; accurate method; volume; to weigh.

5. Give a detailed description of reinforced concrete production. Use the key words:

concrete, reinforced concrete, to be reinforced with …, iron and steel bars, elasticity, initial plasticity, final rigidity, resistance to …, low thermal insulating value, to require forms, to be kept warm, preferred material.

6. Compare concrete and reinforced concrete with other building materials. Discuss the problem with your friends, give your opinion:

– As far as I know … ;
– I suppose … ;
– The fact is … ;
– To start with … ;
– They say … ;
– If I am not mistaken … .

7. Give a short summary of the text.

VI. Listening Comprehension

1. Translate the following words and word-combinations into Ukrainian:

prestressed concrete, tendons, high-tensile steel, pretensioning, posttensioning, anchore, to release, to induce, to annul, wire, hole, grout, creep, shrinkage, span.

2. Mask the text “Prestressed concrete” and listen to it attentively:

Text B. Prestressed Concrete

Prestressed concrete is not a new material. We know it to be an

improved form of reinforced concrete. It can be defined as concrete in which highly stressed tendons are used instead of reinforcing bars. These tendons consist of high-tensile steel while reinforcing bars are usually made of ordinary steel.

There are two ways of achieving prestress in concrete: pretensioning and posttensioning. The word "pretensioning" means that the reinforcing steel is stretched and anchored before the concrete is cast around it. When the concrete has hardened the anchorage of the tendons is released. The bond which has formed between the steel and the concrete prevents the steel from contracting to its original length, and in the way a compressive stress is induced. The compression in the concrete must be great enough to annul any future tension that loads applied may develop. Since the bond is the principal means of transfer of stress from the steel to the concrete, wires are preferred to bars because of their relatively larger surface area. Pretensioning is usually employed for prefabricated elements.

Post-tensioning can be defined as a method of prestressing reinforced concrete in which the reinforcing steel is tensioned after the concrete has hardened. The tendons are usually inserted through holes in the concrete, and after the stretching the space around the tendons may be filled with cement grout under pressure. The post-tensioning of steel is more complicated and less suitable to mass production than the pretensioning process, but the specialists consider it to have some advantages over the other: the elements can be prefabricated in a plant, but also can be produced on the site; post-tensioned concrete is less influenced by early creep and shrinkage, because the stretching can be delayed until a large part of shrinkage has taken place; the reinforcing steel may be bent up to achieve better stress distribution. There are several different systems of post-tensioning, but the procedure itself is almost the same and variations are only in the details of the tendons and their anchorages. The main use of prestressed concrete is for long span structures such as bridges and large tanks and high-pressure pipes.

3. Listen to the text again and answer the following questions:

1. What is the difference between reinforced concrete and prestressed concrete?
2. Haw many ways of achieving prestress in concrete are there?
3. What does the word pretensioning mean?

4. What is pretensioning usually employed for?
5. How can post-tensioning be defined?
6. Is the post-tensioning of steel more complicated?
7. Where is prestressed concrete used?

4. Annotate the text either in English or in Ukrainian. Use the following phrases:

The text is head-lined…
It/the text informs the reader about…
It/the text deals with…
It/the text considers the problem of...
The main idea of the text is…
It/the text describes…
It/the text gives comments on…
It/the text draws reader's attention to…
It is pointed out that…
At the beginning/end…
Further…
The author points out/stresses/informs/considers…
The text is useful and interesting for…

5. Translate the text into Ukrainian.

VII. Written assignment

1. Using text A and B of Unit 9 write a presentation about the production and use of concrete and reinforced concrete in construction industry.

Test № 3 (Units 7,8,9).

Test your professional, socio-cultural and language competences. Mark the correct variant.

1. Nowadays very tall and huge buildings are made of … .
   1. steel and concrete; *2. bricks;* *3. stone.*
2. When placed in … concrete must be protected.
   1. summer; *2. spring;* *3. winter.*
3. Most early engineers were engaged in the construction of … .
   1. dams; *2. bridges;* *3. fortifications.*

4. The ancient Greeks knew the art of building with … .
1. steel; *2. cut stone;* *3. concrete.*
5. Civil engineering is a very popular and … .
1. difficult; *2. extremely broad;*
3. honourable profession.
6. Concrete was widely used by … .
1. Russian; *2. Romans;* *3. Greeks.*
7. … was one of the first building materials.
1. timber; *2. concrete;*
3. portland cement.
8. The silicate industry embraces the production of … .
1. ceramics; *2. cement;*
3. cement glass and ceramics.
9. The materials used to make silicate bricks are … .
1. cement and water; *2. white sand;*
3. white sand and slaked lime.
10. … is very resistant to chemical attack.
1. portland cement; *2. high alumina cement;*
3. tamping cement.
11. The main properties of concrete are … .
1. durability; *2. watertightness;*
3. durability, strength, watertightness, workability.
12. Concrete is an artificial conglomerate of … .
1. crashed stone, gravel or similar inert material with a mortar;
2. crushed stone with water;
3. crushed stone with steel.
13. Reinforced concrete has become so popular because of … .
1. its resistance to fire;
2. its resistance to fire and weather;
3. its durability and strength under loads.
14. Portland cement was produced more than … ago.
1. 50 years; *2. a century;* *3. 10 years.*
15. Greece possessed perfect … for columns, and beams and the arch and dome received little attention.
1. timber; *2. clay;* *3. marble.*
16. It is interest to note briefly the influence of … the schools of architecture.
1. weather; *2. materials;* *3. history.*

17. The hand of the average man is large enough to take a brick and he is able to handle more than … bricks in an eight-hour working day.

1. 500; *2. 5 000;* *3. 1 000.*

18. Having been reinforced with iron bass concrete became rather … .

1. durable; *2. light;* *3. strong.*

19. The external walls are made of sandwich panels with the outer layer made of … .

1. aluminium; *2. plastics;* *3. bricks.*

20. The are … ways of achieving priestess in concrete.

1. two; *2. three;* *3. four.*

21. About 100 bars … been used, half of them being steel.

1. have; *2. were;* *3. had.*

22. We saw them … crushed stone, gravel with mortar.

1. to mix; *2. mixing;* *3. mixed.*

23. A bridge … the two parts of the town will be completed in three years.

1. to connect; *2. connecting;*

3. having connected.

24. The English for "точний метод" is … .

1. accurate method; *2. right method;* *3. exact method.*

25. The initial materials for the production of ordinary glass are mainly … .

1. limestone; *2. soda Na_2CO_3;*

3. limestone $CaCO_3$ and sand SiO_2.

26. The English for "залізобетон" is … .

1. precast concrete; *2. light concrete;*

3. reinforced concrete.

27. A brick may be made … .

1. of burnt clay and of concrete; *2. of sawdust;*

3. of burnt clay of concrete and of mortar.

28. After the decline of the … the art of making concrete has been forgotten.

1. Greece; *2. Egypt;*

3. Roman Empire.

10. 1. Modern Urban Planning. 2. Types of Modern Cities. 3. The Gerund. Gerundial Construction[14].

I. Grammar Revision.

The Gerund /герундій/

Герундій – це неособова форма дієслова із закінченням – ing, що має властивості іменника та дієслов (reading, writing, going).

1) Як іменник герундій може:

1. бути підметом:

Reading is useful.	Читати – корисно.

2. бути додатком:

He likes **reading**.	Він любить читати.

3. бути частиною присудка:

His hobby is **reading.**	Його хоббі – читання.

4. мати перед собою прийменник:

He is fond of **reading**.	Він захоплюється читанням.

5. мати перед собою присвійний займенник або іменник в присвійному відмінку.

Would you mind **my reading** the poem.	Ви не заперечуєте, якщо я прочитаю вірша.

2) Як дієслово герундій (перехідного дієслова)[15] може:

1. мати при собі прямий додаток –

I'm found of **translating articles** of this kind.	Мені подобається перекладати такі статті.

2. визначатися прислівником –

They continued **listening attentively.**	Вони продовжували уважно слухати.

3. мати неозначену (Indefinite) і перфектну (Perfect) форму; вживатися в активному стані (неперехідні дієслова), в активному і пасивному стані (перехідні дієслова).

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[14] Навчальні завдання з розвитку граматичних навичок з англійської мови (теорія, тренувальні вправи, міні та рейтингові тести) для студентів II[x] курсів усіх спеціальностей РДТУ (Частина IV). Рівне: РДТУ, 1999. – С. 24-27.

[15] Перехідні дієслова мають прямий додаток (to write a letter), а неперехідні не мають (to go).

Форми герундія та їх комунікативні значення.

Форми герундія неперехідного дієслова

Voice Tense	Active
Indefinite	**going**
Perfect	**having gone**

Форми герундія перехідного дієслова

Voice Tense	Active	Passive
Indefinite	**writing**	**Being written**
Perfect	**having written**	**having been written**

Порівняйте:

I am looking forward **to sending** him on a business trip.	Я з нетерпінням чекаю, коли **відправлю** його у відрядження.
I am looking forward to **being sent** on a business trip.	Я з нетерпінням чекаю, коли **мене відправлять** у відрядження.

Порівняйте:

I am surprised at his **missing** lessons.	Мене дивує, що він **пропускає** уроки.
I am surprised at his **having missed** lessons.	Мене дивує, що він **пропустив** уроки.

Indefinite Gerund – називає дію одночасну по відношенню до дії, вираженої дієсловом в особовій формі.

Perfect Gerund – називає дію, що передує дії, вираженій дієсловом в особовій формі.

Функція герундія в реченні.

Функція	Приклад	Способи перекладу
1. Підмет. Після виразів: It is no use … It is no good … It is a surprise … It is a fun … **Складний підмет** N'S +V ing Pos. Pr. + V ing	**Reading** is her favourite occupation. **Читати (читання)** – її улюблене заняття.	Іменником, неозначною формою дієслова.
	It is no use **ringing** him up. It was a surprise **seeing** him here. Peter's **reading** *was good.* **My going** there is necessary.	

2. Частина складного присудка. Після дієслів: can't help, to begin, to continue, to finish, to go on, to keep on, to stop, to give up.	Her greatest pleasure is **reading.** Її найбільше задоволення – **читати (читання).**	
	I **can't help smiling.** You must **give up smoking**.	
3. Прямий додаток Після дієслів: to like, to need, to prefer, to remember, to enjoy, to mind, to be busy, to excuse, to be worth, to forget	Do you like **dancing**? Вам подобається **танцювати**?	Присудком підрядного речення.
	Excuse my **leaving** you. Пробачте, що я **залишив** вас.	
4. Прийменниковий додаток: to depend on, to rely on, to dream of, to object to, to blame for, to thank for, to praise for, to be responsible for, to be interested in, to be engaged in, to be found of, to look forward to, to feel like …	I don't feel like **going** there. Мені не хочеться туди **йти**.	
5. Означення. opportunity of, idea of, chance of, importance of, hope of, way of, experience in, interest in, reason for …	The idea of **going** there was brilliant. Ідея **піти** туди була чудовою.	
6. Обставина: а) часу з приймен-никами: after, before, on. б) способу дії з прий-менниками: by, without, instead of, besides.	**On seeing** his farther, the boy ran up to him. **Побачивши** батька, хлопчик побіг до нього.	Дієприслівни ком.
	We gain much **by reading**. **Читаючи** ми багато пізнаємо.	
	You can't leave **without saying** good-by. Ви не можете поїхати, **не попрощавшись**.	

Після дієслів **to like, to begin, to continue, to finish** можна вживати як інфінітив, так і герундій, значення при цьому не змінюється.

He likes reading books.	Він любить читати книжки.
He likes to read books.	

Після дієслів **to stop, to remember, to forget** можна вживати як інфінітив, так і герундій, але значення при цьому змінюється.

John **stopped** studying.	Джон припинив навчання.
John **stopped** to have a rest.	Джон зупинився, щоб перепочити.
I **remember** meeting him ten years ago.	Я пам'ятаю, що зустрічав його 10 років тому.
I must **remember** to meet him.	Я пам'ятаю, що повинен зустріти його.
She **forgot** answering the letter.	Вона забула, що відповідала на листа.
She **forgot** to answer the letter.	Вона забула відповісти на листа.

II. Vocabulary Comprehension.

1. Learn the words and word-combinations to comprehend the text:

urban planning	планування міста
urban renewal	відновлення міста
to undergo	піддаватися (чому-небудь)
multifunctional center	багатофункціональний центр
omnifunctional center	однофункціональний центр
human settlements	поселення людей
city core	середина міста
within the confines of	в межах
attainable	досяжний
goal	мета
to counteract	протидіяти
to waste time	утрачати час
to establish	створювати
meaningfulness	значення
to succeed	досягати мети
to invent methods	винайти методи
associated with	зв'язаний з …
cohesive center	зв'язаний центр
to supply	постачати
tools	інструменти
to apply	застосовувати
inner space	внутрішній простір
assembly rooms	зали для зборів

freight elevator	вантажопідйомник
moving ramps	рухливий трап
multistoried	багатоповерховий
threshold	поріг

2. Read the following international words and give their Ukrainian equivalents:

multi, center, plan, transport, urban, problem, vacuum, human, fortification, maximum, vertical, transportation, control, office, hospital, technology, role.

3. Underline the affixes, state what part of speech they indicate and translate them into Ukrainian:

planning, renewal, undergo, multifunctional, omnifunctional, natural, settlement, formally, requirement, attainable, shopping, meaningfulness, relationship, planner, utilization, development, multistoried, multilevel, available.

III. Reading Comprehension

1. Skim the text first to define its general subject and the subject of each paragraph .Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers, describes, informs).

2. Skim the text again and answer the following questions:

1. Is the goal of urban planning mentioned?
2. How many concepts of urban planning described?
3. What tools has technology supplied planners with to succeed in creating multifunctional centers?

3. Read the text:

Text A. Modern Urban Planning

1. Urban (city, town) planning integrates land use planning and transport planning to improve the environments of communities. It can include urban renewal, by adapting urban planning methods to existing cities.

2. Urban planning has undergone different changes during centuries. There have existed different schools and approaches to this problem. Today one of them is the concept of the multifunctional center. It does not come out of a vacuum and represents, in fact, the natural and organic organization pattern which has existed since the founding of human settlements. On the other hand many of the old city cores grew not just as multifunctional centers but as omnifunctional centers. This was due to the fact that within the confines of the old cities, formerly protected by fortifications, all urban requirements had to be satisfied. This omnifunctionality is no longer necessary or attainable.

3. The new-type multifunctional center cannot be developed with the goal of creating omnifunctional centers. The goal should be rather to combine as many urban functions of the center-conforming type as possible in a concentrated and land-conserving manner. The task of creating a multifunctional center is difficult and complex because it is necessary to place a maximum amount of enclosed space serving human activities on a minimum of land.

4. Multifunctionality is already established when just two different urban functions are combined (for example shopping facilities with employment facilities in offices). But the meaningfulness of multifunctionality grows when one succeeds in combining a large number of urban functions within one physical framework.

The problem which faces the center team is that of inventing methods which make possible the most intensive use of land, avoiding, however, the disadvantages and dangers commonly associated with the term high density.

To create cohesive and concentrated multifunctional centers, then we will have to succeed in changing the relationship between productive surface and land surface considerably.

5. Technology has supplied planners with certain tools which have changed the design of structures from an engineering and architectural point of view. Outstanding in this respect is the progress made in creating conditions of controlled light and air on the one hand and in the field of vertical transportation on the other hand.

6. Conditions of controlled air and light can be applied to a large number of utilizations of inner space, such as meeting rooms, conference rooms, cinemas (which of course have to be dark in order to operate), lecture halls, storage rooms (whether for goods or automobiles),

restaurants, etc. It is thus possible to establish a listing of urban functions for which conditions of controlled light and air are definitely preferable. Controlled light and air assist designers in utilizing land in a highly intensified manner.

7. The second tool is the development of vertical transportation. Technology has replaced the individual transportation medium, the climbing of stairs, through highly efficient and speedy public transportation, by means of electronic elevators, escalations, freight elevators, inclined moving ramps, vertical conveyer belt systems, etc. These inventions have made possible the construction of multistoried department stores, multilevel shopping centers and, of course, high-rise apartment buildings, office buildings, hospitals, etc. There is no doubt that we are on the threshold of new technological development concerning horizontal public transportation. In connection with the concept of the multifunctional center, both the already applied technology concerning vertical transportation and the already available but not yet applied technology concerning horizontal transportation will have to play a role.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because…
Just the contrary…
I think…
To my mind…

1. Urban planning deals with new cities.
2. The concept of a multifunctional center is rather old.
3. Many old city cores grew just as multifunctional centers.
4. A new type multifunctional center combines as many urban functions as possible.
5. Multifunctionality is already established when just three different urban functions are combined.
6. The task of creating multifunctional centers is not difficult.
7. It is possible to plan multifunctional centers without new technologies.
8. Conditions of controlled air and light are applied to a large number of utilizations of outspace.
9. Horizontal movement is the second tool which has made possible

the construction of multistoried buildings.

5. Study the text and answer the following questions:

1. What does urban planning include?
2. When did the concept of multifunctionality appear?
3. What were old city cores like?
4. What is the goal of the new-type multifunctional center?
5. Why is the task of creating a multifunctional center difficult and complex?
6. When is multifunctionality established?
7. What problems face the center team?
8. What technologies made the creating of multifunctional centers possible?
9. How can controlled air and light be applied?
10. What are the main means of vertical transportation?

6. Render the text in Ukrainian.

IV. Vocabulary and Grammar Activator

1. Study the text and give Ukrainian equivalents for the following words and word-combinations:

land use planning, transport planning, social environment, urban planning method, human settlement, concentrated land conservative manner, shopping facilities, employment facilities, productive surface, land surface, point of view, inner space, highly intensified manner, belt system, vertical conveyer, multistoried department store, there is no doubt, to play a role.

2. Study the text and give English for the following words and word-combinations:

зразок природної та органічної організації; багатофункціональний центр нового типу; тип, якому властиве тяжіння до центру; максимально заповнити замкнений простір; коли вдається об'єднати; проблема, з якою стикається група, що працює над розробкою центру; висока густота; з технічної та архітектурної точки зору; у цьому відношенні значне місце належить прогресу; створення умов для контролю за освітленням та вентиляцією; встановити перелік функцій використання в міському господарстві; багатоповерхові житлові будинки.

3. Combine the words from the left and right columns to make word-combinations. Translate them into Ukrainian:

urban	settlement
social	center
multifunctional	type
natural	activity
apartment	density
human	population
inner	renewal
city	air
omnifunctional	environmental
center-conforming	pattern
space	light
center	function
high	point of view
productive	team
land	transportation
engineering	surface
architectural	space
controlled	building
vertical	

4. Match up these verbs and nouns to make common collocations. Translate them into Ukrainian:

to adapt	methods
to undergo	changes
to be due to	the fact
to satisfy	requirements
to combine	functions
to succeed in	combining
to face	the problem
to supply with	tools
to establish	a listing
to assist	designers
to make	possible
to play	a role

5. Give sentences using word-combinations from Ex.3, 4.

6. Study the text, and find sentences with the Gerund. Translate them into Ukrainian.

7. Translate the following sentences into Ukrainian:

1. It is no use renewing this center.
2. It is worth adapting new planning methods to this city.
3. This city center needs restructuring.
4. Everybody understands the reason for establishing multifunctionality.
5. They are engaged in creating conditions for controlled light.
6. The architect is busy listing buildings which need renewing.
7. Town authority doesn't mind changing the city center.
8. We enjoyed our city center's having been reconstructed.
9. We don't know the reason of architect's changing mind.
10. After having combined different urban functions, they succeeded in building a new center.

V. Talking Assignments

1. Divide the text into logical parts.

2. Express the main idea of each part. Use the following phrases:

– The first (second, third …) part of the text is about …
– It describes (considers, deals with, informs) …
– The author stresses (points out) that …

3. Ask your friend questions in English about their content. Summarize his/her answer:

– Що включає планування міста?
– Якими міста були раніше? Які вони зараз?
– Скільки функцій повинен виконувати багатофункціональний центр?
– З якими проблемами стикаються планувальники?
– Які нові технології допомагають планувати міста?
– Які переваги контрольованого освітлення та вентиляції?
– Які переваги вертикального перевезення?

4. Explain the difference between the terms "multifunctional center" and "unifunctional center", "productive surface" and "land surface".

5. Pair-work. Role-play. You are a professor. You are examining one of your students. Ask him questions concerning Modern Urban Planning.

6. Summarize your students' point of view. Do you agree with them? Give your reasons:

– To start with … ;
– If I am not mistaken … ;
– Frankly speaking … ;
– To tell the truth … ;
– Actually … ;
– I suppose.

7. Give a short summary of the text.

VI. Listening Comprehension

1. Translate the following words and word-combinations into Ukrainian:

arbitrary; overlapping functions; seat of institution; resort town; dawn; temple; trade; raw materials; supply of labour; historical continuum; recuperation.

2. Mask the text "Types of Modern Cities" and listen to it attentively:

Text B. Types of Modern Cities

Any classification of cities is somewhat arbitrary. The criteria of classification are a matter of choice. We classify cities according to function, but we recognize that most cities are dedicated to a plurality of overlapping functions. The type is derived from the predominating function. Some cities, of course, are distinct types, such as college towns, one-industry towns, or agricultural trading centers. But such clear distinction is the exception rather than the rule.

To establish a system of classification, we arrange function according to the manner in which it occurred in urban history. There are cities that function as seats of institutions, trading centers, industrial centers, metropolitan centers, and resort towns.

The first mentioned city type, characterized as the seat of- one or several institutions, reaches back into the dawn of urban history when

city life was centered around the temple or the palace of the ruler. There were economic reasons, of course, that made the foundation and growth of such cities possible. They were dependent upon an agricultural surplus in the immediate hinterland. Yet the economic function of these early cities was subsidiary to religious worship or secular homage.

The city as a center exclusively for trade and commerce was prominent at another phase of urban development. Such singleness of purpose is unusual for the large city in the contemporary scene. The cities at the shores of the Mediterranean Sea in antiquity, however, could be considered primarily centers of trade and commerce. Upon these cities the products of a vast rural hinterland converged. Between these cities, products of the hinterland were exchanged. From the urban centers, these products Were distributed to the country population in the region.

In the Middle Ages, urban commerce developed before urban industry. Trade gave a livelihood to merchants and to those engaged in transportation before it stimulated the development of crafts and industries which were later to replace the commercial activities in importance. In the contemporary scene, we have to look to our agricultural trading centers for a similar type of town.

The industrial city reaches its full development during the industrialization process itself. It is dependent, in both location and growth, upon the availability of raw materials within a favorable range of transportation. It is also dependent upon a supply of labour, and not unconcerned with the distance at which the product can be marketed.

In the metropolitan center, the process of urbanization reaches its climax. The metropolitan center is characterized by a multiplicity of functions. It contains industry as well as commerce, educational as well as governmental institutions. The metropolitan center feeds on the cumulative processes of urban growth.

The metropolis may start its development from any of the above mentioned types.

We place the resort town at the very end of our historical continuum. The resort town appears as the outgrowth of a metropolitan way of life that requires specialized services for purposes of human recuperation. The resort is most frequently tied to small urban settlements which function simultaneously as agricultural trading centers. Accessibility to metropolitan travelers and a site which appeals through natural catures

such as lakes and meadows and mountains are important prerequisites.

Such conditions establish for the indigenous population the opportunity of additional income through boarding houses, hotels, cabins, and artificial recreational facilities.

3. Listen to the text again and answer the following questions:

1. What is the type of the city derived from? 2. When did the cities as seats of institutions appear? 3. What type of the city do the college towns belong to? 4. Did the cities as trading centers exist in antiquity? 5. What is the industrial city dependent upon? 6. What kind of a city expresses the idea of urbanization as its climax? 7. Where are the resort towns located?

4. Discussion questions:

1. What groups are the cities classified into according to their functions? 2. What were the reasons for building cities as seats of institutions? 3. What kinds of cities as seats of institutions are there now? 4. Where were the cities as centers of trade situated in ancient times? 5. Why are the industrial centers dependent upon transport and supply of labour? 6. What is the multiplicity of functions of the modern metropolitan centre? 7. What are the opportunities of additional income for the people in the resort towns?

5. Group activities:

a) Is there a limit in the continuous growth of the metropolitan centres?

b) What are the advantages and disadvantages of a metropolis centre?

6. Annotate the text either in English or in Ukrainian. Use the following phrases:

The text is head-lined…
It/the text informs the reader about…
It/the text deals with…
It/the text considers the problem of...
The main idea of the text is…
It/the text describes…
It/the text gives comments on…
It/the text draws reader's attention to…

It is pointed out that…
At the beginning/end…
Further…
The author points out/stresses/informs/considers…
The text is useful and interesting for…

7. Translate the text into Ukrainian.

VII. Written assignment

1. Write a presentation about types of modern cities and their functions.

11. 1. Some Aspects of Urban Planning. 2. From the History of Urban Planning. 3. Consolidation.

I. Vocabulary Comprehension

1. Learn the words and word-combinations to comprehend the text:

aspect	аспект, сторона
safety	безпека
flood	повінь
storm surge	штормова хвиля
threat	загроза
green belt	зелений пояс
to mitigate	зменшити, помякшити
unintrusive	ненавязливий
inclusive design	проект, що включає
to anticipate	передбачати, попереджати
unadorned area	неприкрашений район
abandonment	занедбалість
to force	примушувати
density	щільність (населення)
to increase	зростати
pollution	забруднення
parking space	зона паркування
exurb	район за межами міста
to make viable	робити життєздатним
to dub	прирівнювати

town cramming	міська тиснява
to shade	затіняти
exodus	масовий від'їзд
sidewalk level	тротуар
often-decried phenomenon	явище, яке часто відкрито засуджується
source of pollution	джерело забруднення
noise abatement	зменшення шуму
excessive glare	занадто яскраве світло
cutoff fixture	устаткування, яке
to install	встановлювати

2. Read the following international words and give their Ukrainian equivalents:

urban, risk, extreme, evacuation, maximize, criminal, criminality, psychological, antidote, indicator, transport, unique, infrastructure, canyon, decibel, problem, aesthetics, aspect, factor, process.

II. Reading Comprehension

1. Skim the text first to define its general subject and the subject of each paragraph .Use the following phrases:

The text is about…

The subject of the text is…

There are…paragraphs in it.

The first (second, third, etc.) paragraph deals with (considers, describes, informs).

2. Skim the text again and answer the following questions:

1. What aspects of planning are mentioned?
2. What safety measures are mentioned?
3. What presents unique problems within urbanized areas?
4. Is the "urban canyon effect" described?

3. Read the text:

Text A. Some Aspects of Urban Planning

1. Cities and towns are growing all over the world, and their appearance is changing. That's why the role of urban planners in the planning process is very important. They have to take into consideration different aspects of planning: aesthetics, safety, slums, urban decay,

reconstruction and renewal, transport, environmental factors, light and sound, etc. We are going to consider some of them.

2. Historically within the Middle East, Europe and the rest of the Old World, settlements were located on higher ground (for defense) and close to fresh water sources. Cities have often grown onto coastal and flood plains at risk of floods and storm surges. Urban planners must consider these threats. If the dangers can be localized then the affected regions can be made into parkland or green belt. Extreme weather, flood, or other emergencies can often be greatly mitigated with secure emergency evacuation routes and emergency operations centres. These are relatively inexpensive and unintrusive, and many consider them a reasonable precaution for any urban space.

In recent years, practitioners have also been expected to maximize the accessibility of an area to people with different abilities, practising the notion of "inclusive design," to anticipate criminal behaviour and consequently to "design-out crime". Some city planners try to control criminality with structures designed from theories such as socio-architecture or environmental determinism. Oscar Newman and Jane Jacobs are notable environmental determinists. These theories say that an urban environment can influence individuals' obedience. The theories often say that psychological pressure develops in more densely developed, unadorned areas. This stress causes some crimes and some use of illegal drugs. The antidote is usually more individual space and better, more beautiful space design.

The "broken-windows" theory argues that small indicators of neglect, such as broken windows and unkempt lawns, promote a feeling that an area is in a state of decay. Anticipating decay, people fail to maintain their own properties. The theory suggests that abandonment causes crime, rather than crime causes abandonment.

3. Transport within urbanized areas presents unique problems. The density of an urban environment increases traffic, which can harm businesses and increase pollution unless properly managed. Parking space for private vehicles requires the construction of large parking garages in high density areas. This space could often be more valuable for other development.

Good planning uses transit oriented development, which attempts to place higher densities of jobs or residents near high-volume transportation. For example, some cities permit commerce and multistory

apartment buildings only within one block of train stations and multilane boulevards, and accept single-family dwellings and parks farther away.

Floor area ratio is often used to measure density. This is the floor area of buildings divided by the land area. Ratios below 1.5 are low density. Ratios above five are very high density. Most exurbs are below two, while most city centres are well above five. Walk-up apartments with basement garages can easily achieve a density of three. Skyscrapers easily achieve densities of thirty or more. Problems can often occur at residential densities between about two and five. These densities can cause traffic jams for automobiles, yet are too low to be commercially served by trains or light rail systems.

4. The urban canyon effect is a colloquial, non-scientific term referring to street space bordered by very high buildings. This type of environment may shade the sidewalk level from direct sunlight during most daylight hours. While an often-decried phenomenon, it is rare except in very dense, hyper-tall urban environments, such as those found in Lower and Midtown Manhattan, Chicago's Loop and Kowloon in Hong Kong.

In urban planning, sound is usually measured as a source of pollution. Studies on urban sounds emphasize that sound aesthetics involves more than noise abatement and decibel measurements.

Light pollution has become a problem in urban residential areas because some lighting is so intrusive and causes conflict in the residential areas. Besides paradoxically intense improperly installed security lighting may pose a danger to the public, producing excessive glare. The development of the full cutoff fixture, properly installed, has reduced this problem considerably.

4. Are these statements true or false? If they are false, say why. Use the following phrases:

I can't agree to this statement because…
Just the contrary…
I think…
To my mind…

1. Historically settlements were located in forests.
2. The notion of "inclusive design" anticipates criminal behaviour.
3. An urban environment can't influence individuals' obedience to social rules.

4. Transport problem is easily solved within urbanized areas.
5. Floor area ratio is used to measure density.
6. The urban canyon effect can be found in the streets with low buildings.
7. Sound can be measured as source of pollution.

5. Study the text and answer the following questions:

1. Where were first settlements located?
2. What threats must urban planners consider?
3. What regions can be made into parkland or green belt?
4. How do some city planners try to control criminality?
5. Why does transport present unique problem?
6. How can transport problems be solved within urbanized areas?
7. How is density measured?
8. What does the term "urban canyon effect" mean?
9. How can the problem of light pollution be reduced?
10. How can the problem of sound pollution be reduced?

6. Study the text and match headlines A-F with paragraphs 1-4. There are two headlines you don't need.

A. Urban aesthetics.	1. ……..
B. Aspects of planning.	2. ……..
C. Transport.	3. ……..
D. Slums.	4. ……..
E. Safety.	5. ……..
F. Light and sound.	6. ……..

7. Render the text in Ukrainian.

III. Vocabulary and Grammar Activator

1. Study the text and give Ukrainian equivalents for the following words and word-combinations:

fresh water sources; emergency evacuation routes; environmental determinism; unadorned areas; "broken- windows" theory; unkempt lawns; unique problems; urban environment; parking space; transit oriented development; high volume transportation; multi-story apartment buildings; train stations; multilane boulevards; single- family dwellings; floor area ratio; land area; walk-up apartments; basement garages; per-

capita infrastructure costs; mass transport systems; traffic jams; urban canyon effect; street space; sidewalk level; daylight hours; soundscape studies; cutoff fixture.

2. Combine the words from the left and right columns to make compound nouns. Translate them into Ukrainian:

high	architecture
multi	light
single	walk
side	tall
sun	lane
day	story
hyper	land
park	family
socio	

3. Complete with the words from the text. Translate them into Ukrainian.

	Noun	**Adjective**
1.	……	safe
2.	coast	……
3.	reason	……
4.	environment	……
5.	……	criminal
6.	psychology	……
7.	……	dense
8.	resident	……
9.	……	secure
10.	excess	……
11.	use	……
12.	value	……
13.	……	accessible
14.	……	able

	Verb	**Noun**
1.	settle	……
2.	plan	……
3.	evacuate	……

4.	indicate	……
5.	abandon	……
6.	develop	……
7.	transport	……
8.	pollute	……
9.	measure	……
10.	abate	……
11.	construct	……
12.	determine	……
13.	appear	……
14.	adapt	……
15.	……	designer

	Adjective	Adverb
1.	historical	……
2.	great	……
3.	consequent	……
4.	dense	……
5.	commercial	……
6.	paradoxical	……
7.	proper	……
8.	considerable	……
9.	relative	……

4. Study the text and find antonyms for the following words:

expensive, intrusive, adorned, legal, kempt, scientific, properly, decrease.

5. Combine the columns A, B, C to make a phrase from the text. Translate them into Ukrainian:

A	B	C
Adaptation	of	a space
Accessibility	to	ground
To consider	by	plains
To divide	onto	threats
To have the advantage	into	parklland
To grow	with	routes
To make	on	an area

To be mitigated	for	making
In place		urban living
To take		
To be located		
Precaution		
Ways		

6. Complete the sentences with appropriate words or word-combinations from the text:

While planning a … every … … has to consider different … of planning. … means freedom from danger and risks. These risks include … …, flood, … of an area to people with different …, abandonment. … presents unique problems, especially within … areas. The density of urban … increases … which requires large … …. … between two and five can cause … …. … and … pollution have also become a problem in urban … areas. The … … … is typical for …, hyper-tall urban …. … aesthetics which involve noise … and decibel … must be observed to decrease sound …. Intrusive … has also become a problem in residential …. To reduce … glare full … … has been installed

IV. Talking Assignments

1. Divide the text into logical parts.

2. Express the main idea of each part. Use the following phrases:

– The first (second, third …) part of the text is about …
– It describes (considers, deals with, informs) …
– The author stresses (points out) that …

3. Ask your friend questions in English about their content. Summarize his/her answers.

– Скільки частин, на вашу думку, має текст?
– Як ви назвали першу (другу, третю...) частину?
– Про що перша частина? Які аспекти планування розглядає автор?
– Які основні питання розглядаються в частині «Безпека»?
– Де, зазвичай, будували міста? Чому?
– Хто такі О. Ньюмен і Дж. Якобс?
– Яку теорію вони розробили? У чому її суть?

– Які основні питання розглядаються в частині «Транспорт»?
– Що впливає на транспорт в містах?
– Як обраховується щільність населення?
– Яка щільність населення найбільш проблемна для транспорту?
– Які основні питання розглядаються в частині «Світло і шум»?
– Які проблеми викликає надміре та недостатнє освітлення?
– Чому шум є джерелом забруднення?

4. Do you agree with your friend's answers? Give your reasons:
– As far as I know;
– I must confess;
– Well it seems;
– In my opinion;
– I think;
– I wonder;
– The point is;
– The fact is;
– If I'm not mistaken.

5. Solve the problems connected with town planning.
Say: - To reduce … it is necessary to ….
Problems:
– There is a risk of extreme weather floods and storm surges.
– People with different abilities, criminality.
– The density of an urban environment increases traffic and consequently pollution.
– Urban canyon effect.
– Sound pollution.
– Light pollution.
Ways of solving:
– To develop the full cutoff fixture.
– To install security lighting.
– To mitigate emergencies with secure emergency evacuation routes and emergency operations centers.
– To practice the notion of "inclusive design".
– To make more individual space and better, more beautiful design.
– To make the affected regions into parkland or green belt.
– To manage properly the density of an urban environment.

– To construct large parking garages.
– To use transit oriented development.

6. Give a short summary of the text.

VI. Listening Comprehension

1. Translate the following words and word-combinations into Ukrainian:

forethought, layout, to conclude, deliberately, to pave, angle, grid, hierarchy, water well, ritual, consolidated, convenience, rectilinear, to wrap, sewage disposal, to intersect, to fit, insula, eventually, to crisscross, gateway, watchtower, portcullis, siege.

2. Mask the text "From the History of Urban Planning" and listen to it attentively:

Text B. From the History of Urban Planning

As an organized profession, urban planning has only existed for the last 60 years. However, most settlements and cities show forethought and conscious design in their layout and functioning.

The pre-Classical and Classical ages saw a number of cities laid out according to fixed plans, though many tended to develop organically. Designed cities were characteristic of the totalitarian Mesopotamian, Harrapan, and Egyptian civilizations.

Distinct characteristics of urban planning from remains of the cities of Harappa, Lothal and Mohenjo-daro in the Indus Valley Civilization (in modern-day northwestern India and Pakistan) lead archeologists to conclude that they are the earliest examples of deliberately planned and managed cities. The streets of these early cities were often paved and laid out at right angles in a grid pattern, with hierarchy of streets from major boulevards to residential alleys. Archaeological evidence suggests that many Harrapan houses were laid out to protect from noise and enhance residential privacy; also, they often had their own water wells for probably both sanitary and ritual purposes. These ancient cities were unique in that they often had drainage systems, seemingly tied to a well-developed ideal of urban sanitation.

Ur, located near the Euphrates and Tigris rivers in modern day Iraq also had urban planning in later periods. The Greek Hippodamus (c. 407 BC) is widely considered the father of city planning in the West, for his design of Miletus; Alexander commissioned him to lay out his new city

of Alexandria, the grandest example of idealized urban planning of the Mediterranean world, where regularity was aided in large part by its level site near a mouth of the Nile.

The ancient Romans used a consolidated scheme for city planning, developed for military defense and civil convenience. The basic plan is a central forum with city services, surrounded by a compact rectilinear grid of streets and wrapped in a wall for defense. To reduce travel times, two diagonal streets cross the square grid corner-to-corner, passing through the central square. A river usually flowed through the city, to provide water, transport, and sewage disposal. Many European towns, such as Turin, still preserve the remains of these schemes. The Romans had a very logical way of designing their cities. They laid out the streets at right angles, in the form of a square grid. All the roads were equal in width and length, except for two. These two roads formed the center of the grid and intersected in the middle. One went East/West, the other North/South. They were slightly wider than the others. All roads were made of carefully fitted stones and smaller hard packed stones. Bridges were also constructed where needed. Each square marked by four roads was called an *insula,* the Roman equivalent of modern city blocks. Each insula was 80 yards (73 m) square, with the land within each insula divided. As the city developed, each insula would eventually be filled with buildings of various shapes and sizes and would be crisscrossed with back roads and alleys. Most insulae were given to the first settlers of a budding new Roman city, but each person had to pay to construct their own house.

The city was surrounded by a wall to protect the city from invaders and other enemies, and to mark the city limits. Areas outside of the city limits were left open as farmland. At the end of each main road, there would be a large gateway with watchtowers. A portcullis covered the opening when the city was under siege, and additional watchtowers were constructed around the rest of the city's wall. A water aqueduct was built outside of the city's walls.

The collapse of Roman civilization saw the end of their urban planning, among many other arts.

3. Listen to the text again and answer the following questions:

1. How long has an organized profession of urban planning existed?
2. What did most settlements show?

3. Which cities are the earliest examples of deliberately planned and managed ones?
4. What were they like?
5. Who is considered the father of city planning in the West?
6. What were the ancient Romans's cities like?

4. Discuss with your friend the peculiarities of town planning in ancient countries. Use the following phrases to express your opinion:

– As far as I know; I must disappoint you; Frankly speaking; In my opinion;

I'm afraid; To tell the truth; I think; The fact is; Unfortunately; I suppose; I must confess; Most (un)likely.

5. Annotate the text either in English or in Ukrainian. Use the following phrases:

The text is head-lined…
It/the text informs the reader about…
It/the text deals with…
It/the text considers the problem of...
The main idea of the text is…
It/the text describes…
It/the text gives comments on…
It/the text draws reader's attention to…
It is pointed out that…
At the beginning/end…
Further…
The author points out/stresses/informs/considers…
The text is useful and interesting for…

6. Translate the text into Ukrainian.

VI. Written assignment.

1. Write a presentation about some aspects of town planning.

Test № 4 (Units 10,11).

Test your professional, socio-cultural and language competences.
Mark the correct variant.

1. Choose the correct variant and complete the sentence:
People first lived in … .
1. houses; *2. palaces;*
3. trees and caves.

2. The English for "колона" is … .
1. door; *2. loggia;* *3. pillar.*

3. Civil engineering was not distinguished from other branches of engineering until … .
1. today; *2. 200 years ago;*
3. 50 years ago.

4. The word "building" is mainly used in the sense of … .
1. water supply; *2. roads;*
3. Domestic dwellings.

5. The English for "фундамент" is … .
1. base; *2. basis;* *3. foundation.*

6. The English for "майстер на будівництві" is … .
1. foreman; *2. master;* *3. assembler.*

7. The English for "начальник будівництва" is … .
1. building surveyor; *2. brick layer;*
3. construction site chief.

8. … is very resistant to chemical attack.
1. portland cement; *2. high alumina cement;*
3. tamping cement.

9. The English for "стічна труба" is … .
1. sewer; *2. sewage;* *3. sewarage.*

10. The English for "виконроб" is … .
1. work superintendent; *2. jointer;*
3. work safety engineer.

11. The English for "середина міста" is … .
1. city core; *2. city center;* *3. the outskirts.*

12. Multifunctionality is already established when just … different urban functions are combined.
1. two; *2. three;* *3. four.*

13. The industrial city reaches its full development during the … process it self.

1. industrialization; *2. development;* *3. decay.*

14. The … is most frequently tied to small urban settlements which function simultaneously as agricultural trading centers.

1. city; *2. town;* *3. resort.*

11. The English for "щільність (населення)" is … .

1. density; *2. safety;* *3. flood.*

16. Historically within the Middle East, Europe and the rest of the Old World, settlements were located on … ground (for defense) and close to fresh water sources.

1. lower; *2. higher;* *3. under.*

17. The theories often say that … pressure develops in more densely developed, unadorned areas.

1. ecological; *2. psychological;* *3. biological.*

18. … within urbanized areas presents unique problems.

1. transport; *2. pollution;* *3. business.*

19. Ratios below … are low density, ratios above five are very high density.

1. 5; *2. 2;* *3. 1.*

20. In urban planning, sound is usually measured as a source of … .

1. noise; *2. pollution;* *3. danger.*

21. As an organized profession, urban planning has only existed for the last … years.

1. 90; *2. 60;* *3. 100.*

22. The ancient … used a consolidated scheme for city planning, developed for military defense and civil convenience.

1. Romans; *2. Greeks;* *3. Egyptians.*

23. The Romans had a very … way of designing their cities.

1. right; *2. primitive;* *3. logical.*

24. All … were made of carefully fitted stones and smaller hard packed stones .

1. bridges; *2. roads;* *3. streets.*

25. The city was surrounded by a wall to protect the city from … and other enemies, and to mark the city limits .

1. flood; *2. storms;* *3. invaders.*

26. The Greek … is considered the father of city planning in the west .

1. Hippodamus; *2. Allnander;* *3. Euphrates.*

VOCABULARY

A

abound (v.)	бути у великій кількості
accessibility (n.)	доступність
air (n.)	повітря
~ conditioning	кондиціонування ~
alumina (n.)	глинозем
anchor (n.)	анкер
angle (n.)	кут
anticipate (v.)	очікувати, передбачати
approach (n.)	підхід, наближення
arbitrary (adj.)	довільний
arch (n.)	арка
area (n.)	район, площа, простір
dormitory ~	«спальний» ~
unadorned ~	неприкрашений ~
argue (v.)	сперечатися,
~ with, against	~ з ким-небудь
~ about	~ про що-небудь
art (n.)	мистецтво
artificial (adj.)	штучний
ascend (v.)	підніматися, сходити
aspect (n.)	аспект, сторона
assemble (v.)	монтувати
~ on the spot	~ на площадці
assembly (n.)	збори, монтаж
~ rooms	зали для зборів
~ -line principle	принцип монтажу (конвеєр)
associated with … (adj.)	зв'язаний з …
attain (v.)	досягати, добувати
attainable (adj.)	досяжний
availability (n.)	наявність

B

ballast (n.)	баласт, підготовка (подушка)
banister (n.)	поруччя (сходів)
barn (n.)	комора, клуня
barrow (n.)	тачка, ручний візок

basement (n.)	основа, фундамент, підвальне приміщення
beam (n.)	балка, брус
bear (v.)	витримувати, нести вантаж
bind (v.)	зв'язувати
binder (n.)	зв'язувальна речовина
hydraulic ~	гідравлічна зв'язувальна речовина
bond (v.)	зчіпляти
brick (n.)	цегла
Dutch ~	клінкерна ~
economy ~	ефективна ~
face (facing) ~	лицювальна ~
fire-clay ~	вогнетривка ~
green ~	невипалена ~
hollow ~	пустотіла ~
lime-sand ~	силікатна ~
porous ~	пориста ~
course of ~s	горизонтальний ряд кладки
bricklayer (n.)	муляр
brickyard (n.)	цегляний завод
brittle (adj.)	крихкий
build (n.)	конструкція, форма
build (built, built) (v.)	будувати, споруджувати
builder (v.)	будівельник, підрядчик
building (n.)	будинок, будівля, споруда
apartment ~	багатоквартирний ~
detached ~	~ на одну сім'ю
farm ~	сільськогосподарська ~
prefabricated ~	~ із збірних елементів
reinforced-concrete ~	залізобетонна ~
residential ~	житлова ~
skeleton-type ~	каркасна ~
walk-up ~	~ без ліфта
burn (burnt, burnt) (v.)	горіти
buttress (n.)	контрфорс, підпора
flying ~	аркбутан

C

cantilever (n.)	консоль, консольна балка
carpenter (n.)	тесляр
carry (v.)	нести
~ out	здійснювати
~ the load	~ навантаження
casement (n.)	віконне плетіння
cave (n.)	печера
cement (n.)	цемент
calcium aluminate ~	глиноземний ~
colored ~	кольоровий ~
Portland ~	портланд ~
Portland-pozzolana ~	пуцолановий порт ланд ~
center (n.)	центр
cohesive ~	зв'язаний ~
multifunctional ~	багатофункціональний ~
omnifunctional ~	однофункціональний ~
ceramics (n.)	кераміка
chimney (n.)	труба, димохід
clamp (n.)	затискач, скоба
clay (n.)	глина
clinker (n.)	клінкер, шлак
commensurate (adj.)	відповідний
concrete (n.)	бетон
air-placed ~	торкрет-бетон
breeze ~	шлакобетон
cast-in place ~	монолітний ~
heavyweight ~	важкий ~
lightweight ~	легкий ~
porous ~	пористий ~
precast ~	збірний ~
prestressed ~	попередньо напружений ~
reinforced ~	залізобетон
structural ~	будівельний ~
unreinforced ~	неармований ~
water-resistant ~	водонепроникний ~
conclude (v.)	робити висновок
conductivity (n.)	провідність

consider (v.)	брати до уваги
consideration (n.)	розгляд, увага
give a careful ~	уважно розглядати
construct (v.)	будувати, споруджувати
construction (n.)	будівництво, будівля
~ industry	~на промисловість
~ work	~ні роботи
hydro technical ~	гідротехнічна ~
conveniences (n.)	зручності
cool (v.)	охолоджувати
core (n.)	центр
city ~	~ міста
counteract (v.)	протидіяти
creep (n.)	повзучість
crisscross (v.)	перехрещувати
cross-section (n.)	поперечний переріз
central ~	центральний ~
crown (v.)	вінчати, завершувати

D

deal with … (v.)	мати справу з …
decline (n.)	занепад
deliberately (adv.)	умисно, свідомо
density (n.)	щільність (населення)
descend (v.)	спускатися
design (v.) (n.)	проектувати, проект
inclusive ~	проект, що включає
designate (v.)	визначати, вказувати
designer (n.)	проектувальник
dig (dug, dug) (v.)	копати
disadvantage (n.)	недолік
disposal (n.)	розташування, розміщення
dome (n.)	купол
dormitory (n.)	приміське селище (із стандартних будиночків)
drainage (n.)	осушення
dry (v.)	висушувати
dub (v.)	прирівнювати
durable (adj.)	міцний

dwell (v.)	жити, перебувати
dwelling (n.)	житло, будинок
pretentious ~	претензійний ~
	E
elevator (n.)	ліфт
freight ~	вантажопідйомник
eliminate (v.)	усувати
embrace (v.)	охоплювати
engineer (n.)	інженер
chief ~	головний ~
civil ~	~ -будівельник
design ~	~ -конструктор
engineering (n.)	будівництво
civil ~	цивільне ~
erect (v.)	будувати, споруджувати
establish (v.)	створювати
eventually (adv.)	врешті-решт, зрештою
excavation (n.)	виймання ґрунту
excessive (adj.)	надмірний
~ glare	занадто яскраве світло
exodus (n.)	масовий від'їзд
	F
fail (v.)	зазнати невдачі, не зробити
felt (n.)	фетр, картон
roofing ~	рулонний покрівельний (даховий) матеріал
fill in … (v.)	заповнювати
fire (n.)	вогонь
~ resistant	стійкий до вогню
~ -proof	вогнетривкий
fit (v.)	установлювати, годитися
flood (n.)	повінь
floor (n.)	підлога, поверх
~ joist	балка для ~и
under ~	нижній поверх
upper ~	верхній поверх
force (n.)	сила, величина
bending ~	~ згину (вигину)

block ~	блочна ~
force (v.)	примушувати
foreman (n.)	виконроб, старший майстер
forethought (n.)	передбачливість
foundation (n.)	фундамент
frame (n.)	каркас, корпус, рама
~ construction	каркасна конструкція
~ work	коробка, форма крокви
skeleton ~	каркасний корпус
furnace (n.)	піч, топка
	G
gateway (n.)	ворота, вхід, підворіття
gauge (n.)	міра, масштаб, розмір
girder (n.)	балка, брус, поперечина
glass (n.)	скло
corrugated ~	хвилясте ~
foam (ed) ~	піноскло
~-cutter	скляр
plate ~	листове ~
goal (n.)	мета
grandeur (n.)	пишнота
grid (n.)	решітка, грати
grime (n.)	бруд, сажа
grind (n.)	перемелювати
~ to extremely fine powder	перемелювати на мінімально тонкий порошок
grip (v.)	тримати
grout (n.)	рідкий розчин
guard (n.)	захист, охорона, варта
~ against an excess or inadequacy	захист від надлишку чи непридатності
	H
hack (n.)	кирка, удар кирки
halfway (adj.) (adv.)	що лежить на півдорозі, частково
hammer (n.)	молоток, молот
handle (v.)	брати руками
handrail (n.)	поруччя

harden (v.)	робити (ся) твердим, застигати
heating (n.)	опалення
hierarchy (n.)	ієрархія
highway (n.)	шосе, автострада
hole (n.)	отвір, діра, халупа
humidity (n.)	вологість
relative ~	відносна ~
	I
ignite (v.)	запалювати, розжарювати
impose (v.)	накладати (зобов'язання)
increase (v.)	зростати
induce (v.)	переконувати, схиляти
inflammable (adj.)	легко займистий, гарячий
influence (v.) (n.)	впливати, вплив
insert (v.)	встановлювати
~ a lintel	~ перемичку
install (v.)	установлювати, монтувати
insulating (adj.)	ізоляційний
~ value	~а властивість
intermittent (adj.)	переривчастий, перемежований
intersect (v.)	перетинатися, поділяти на частини
invent (v.)	винаходити
irrigation (n.)	зрошення
	K
kiln (n.)	піч для випалу і для сушіння
rotary ~	обертова ~
	L
laminate (n.)	ламінат
landscape (n.)	пейзаж
last (v.)	тривати
layout (n.)	план, планування, розташування
lb. (Libra)	фунт
limestone (n.)	вапняк
line with … (v.)	обкладати
lintel (n.)	перемичка (вікна або дверей)
load (n.)	навантаження
transmit the ~	передавати ~

locks (n.)	шлюзи
locksmith (n.)	слюсар
	M
maintain (v.)	підтримувати, утримувати
~ a unique position	посідати унікальне місце
maintenance (n.)	догляд, ремонт (поточний)
make (v.)	робити
~ up	утворювати
~ viable	~ життєздатним
manner (n.)	спосіб
marble (n,)	мармур
marl (n.)	мергель, вапняна глина
material (n.)	матеріал
incombustible ~	негорючий ~
raw ~	сировина
mitigate (v.)	зменшити, зм'якшувати
mortar (n.)	будівельний розчин
mould (v.)	відливати форму
mould (n.)	опалубка для бетону
place in ~	розміщувати в опалубку
move (v.)	рухатися
~ing ramp	рухливий трап
multistoried (adj.)	багатоповерховий
	N
neglect (v.)	нехтувати, не зважати уваги
noise (n.)	шум
~ abatement	зменшення ~у
	O
obloquy (n.)	образа, ганьба
obtain (v.)	одержувати
occur (v.)	траплятися, відбуватися
octagon (n.)	восьмикутник
opening (n.)	отвір
order (n.)	порядок, послідовність
overlap (v.)	збігатися, заходити один на іншого
own (v.)	володіти, мати
owner (n.)	власник

P

painter (n.)	маляр
pall (n.)	завіса, покрив
panel (n.)	панель
gypsum concrete ~	гіпсоцементна ~
pave (v.)	мостити, вистилати (підлогу)
pedestrian (n.) (adj.)	пішохід, пішохідний
pentagon (n.)	п’ятикутник
permanent (adj.)	постійний, довгочасний
phenomenon (n.)	явище
often-decried ~	~, яке часто відкрито засуджується
plan (n.)	план, проект
master ~	генеральний ~
plaster (v.)	штукатурити
plasterer (n.)	штукатур
plywood (n.)	фанера
plumber (n.)	водопровідник
pugging (n.)	засипна або набивна звукоізоляція
pollution (n.)	забруднення
post (n.)	опора, стовп
lamp ~	ліхтарний ~
wooden ~	дерев’яна ~
posttensioning (n.)	натяг арматури на бетон
precast (adj.)	заводського виготовлення
prefabricated (adj.)	збірний, виготовлений заводським способом
~ elements	збірні елементи
~ reinforced concrete elements	збірні залізобетонні елементи
pretensioning (n.)	натяг арматури на упори
prevent (v.)	запобігати
~ from settlement	~ зсіданню ґрунту
project (v.)	проектувати, складати проект
protect (v.)	захищати, охороняти
purlin (n.)	лата
purpose (n.)	мета

putty (n.)	шпаклівка, мастика
	Q
qualification (n.)	кваліфікація, підготовленість
qualified (adj.)	кваліфікований, придатний
~ workers	кваліфіковані робітники
	R
rafter (n.)	крокви
reasonable (adj.)	розсудливий, прийнятний
rectangular (adj.)	прямокутний
rectilinear (adj.)	прямолінійний
recuperation (n.)	рекуперація, відновлення
reduce (v.)	зменшувати, скорочувати
~ costs	~ витрати
refrain from … (v.)	утримуватися від чого-небудь
reinforce (v.)	армувати
~ with bars	~ стержнями
release (v.)	роз'єднувати, звільняти
require (v.)	вимагати, потребувати
requirement (n.)	вимога, необхідна умова
reservoir (n.)	водосховище
residential (adj.)	жилий (район міста)
resist (v.)	протистояти
~ compressive forces	~ (не піддаватися) стискуючим силам
resistance (n.)	опір
pronounced ~ to flow	виражений ~ деформації
retain (v.)	підтримувати, зберігати
rigid (adj.)	твердий, негнучкий
ritual (adj.)	обрядовий
roast (v.)	обпалювати, випалювати
roof (n.)	дах
dome-shaped ~	шатровий ~
double-pitch ~	двоскатний ~
flat-deck ~	плоский ~
lean-to ~	односкатний ~
roofing	покрівельний матеріал
slate ~	покрівля із шиферу
tile ~	черепична покрівля

rural (adj.)	сільський
	S
setting (n.)	тужування, затвердіння (бетону)
initial ~ time	початкове тужавлення бетону
safety (n.)	безпека
settle (v.)	оселятися
settlement (n.)	поселення
human ~	~ людей
sewage (n.)	стічні води, нечистоти
sewerage (n.)	каналізація
sewer (n.)	колектор
~ pipe	каналізаційна труба
shape (n.)	форма
shade (v.)	затіняти
sheathe with … (v.)	обшивати
sheathing (n.)	обшивка
shed (v.)	поширювати
sheet (n.)	лист
~ metal	листове залізо
shelter (n.)	притулок, дах
shingle (n.)	покрівельна дранка
shrinkage (n.)	усадка, усушка
sidewalk (n.)	тротуар
siding (n.)	зовнішня обшивка
siege (n.)	облога
silicate (n.)	силікат
silicon (n.)	кремній
site (n.)	ділянка
construction ~	будівельний майданчик
skylight (n.)	верхнє світло, засклений дах
slab (n.)	плита
slake (v.)	гасити
~ lime	~ вапно
slate (n.)	шифер
slurry (n.)	рідке цементне тісто
soil (n.)	грунт
source (n.)	джерело
~ of pollution	~ забруднення

space (n.)	зона
inner ~	внутрішній простір
parking ~	~ паркування
space (v.)	розміщати, розставляти
span (v.)	перекривати (арку, дах)
specifications (n.)	специфікація, інструкція щодо користування
stair (n.)	східець, щабель
flight of ~s	сходовий марш
staircase (n.)	сходи
stake out … (v.)	позначати границю віхами
steel (n.)	сталь
high-tensile ~	~ високої міцності
step (n.)	сходинка
stir (v.)	перемішувати
stone (n.)	камінь
crushed ~	щебінь
storey (n.)	поверх
storm (n.)	шторм
~ surge	штормова хвиля
strength (n.)	міцність
compressive ~	~ на стиск
stress (n.)	напруження
tensile ~	~ розтягу
structure (n.)	споруда
stucco (n.)	штукатурка
subject (v.)	підкоряти, скоряти
be subjected to …	піддавати (впливу)
succeed (v.)	досягти мети
sufficient (adj.)	достатній
supply (n.)	постачання
survey (n.)	зйомка
make a ~	робити землемірну ~у

T

take (v.)	брати, узяти, захопити
~ place	відбуватися
temple (n.)	храм
test (n.)	випробування

~ for setting time	випробування на час тужавлення
~ for soundness	випробування на доброякісність
~ for tensile strength	випробування на опір розтягу
thickness (n.)	товщина
threat ((n.)	загроза
threshold (n.)	поріг
tile (n.)	черепиця
timber (n.)	лісоматеріали
tomb (n.)	могила
tools (n.)	інструменти
town (n.)	місто
~ cramming	міська тиснява
trade (n.)	заняття, професія
trowel (n.)	кельма
truss (n.)	кроквяна ферма
U	
undergo (v.)	переносити, піддаватися (чому-небудь)
unintrusive (adj.)	ненав'язливий
urban (adj.)	міський
~ planning	планування міста
V	
vault (n.)	підвал, склепіння
veneer (v.)	облицьовувати
viscous (adj.)	клейкий, тягучий
W	
wall (n.)	стіна
bearing ~	несуча ~
hollow ~	пустотіла ~
solid ~	суцільна ~
waste (v.)	марнувати, утрачати
~ time	утрачати час
watchtower (n.)	сторожова вежа
water (n.)	вода
running ~	проточна вода
~ pipe	водопровідна труба

~ well	водяна свердловина
~ -supply system	система водопостачання
watertightness (n.)	водонепроникність
wedge (n.)	клин, що-небудь, що має форму клина
weight (n.)	вага, маса
wire (n.)	дріт, провід
wood (n.)	деревина, лісоматеріал
~ shingles	покрівельна дранка
wooden (adj.)	дерев'яний
workability (n.)	оброблюваність
wrap (v.)	загортати, складати

Construction Industry Glossary.

Abstract of title A summary of all deeds, wills, and legal actions to show ownership.

Acoustics The science of sound. In housing, acoustical materials used to keep down noise within a room or to prevent it from passing through walls.

Adobe construction Construction using sun-dried units of adobe soil for walls; usually found in the southwestern United States.

Air conditioner An apparatus that can heat, cool, clean, and circulate air.

Air-dried lumber Lumber that is left in the open to dry rather than being dried by a kiln.

Air duct A pipe, usually made of sheet metal, that conducts air to rooms from a central source.

Air trap A U-shaped pipe filled with water and located beneath plumbing fixtures to form a seal against the passage of gases and odors.

Alcove A recessed space connected at the side of a larger room.

Alteration A change in, or addition to, an existing building.

Amortization An installment payment of a loan, usually monthly for a home loan.

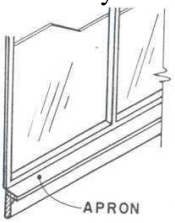
Ampere The unit used in the measure of the rate of flow of electricity.

Anchor bolt A threaded rod inserted in masonry construction for anchoring the sill plate to the foundation.

Angle iron A structural piece of rolled steel shaped to form a 90° angle.

Appraisal The estimated price of a house which a buyer would pay and the seller accept for a property. An appraisal is a detailed evaluation of the property.

Apron The finish board immediately below a window sill. Also the part of the driveway that leads directly into the garage.



Arcade A series of arches supported by a row of columns.

Arch A curved structure that will support itself by mutual pressure and the weight above its curved opening.

Architect A person who plans and designs buildings and oversees their construction.

Area wall A wall surrounding an area way.

Areaway A recessed area below grade around the foundation to allow light and ventilation into a basement window or doorway.

Ashlar A facing of squared stones.

Ashpit The area below the hearth of a fireplace which collects the ashes.

Asphalt Bituminus sandstones used for paving streets and waterproofing flat roofs.

Asphalt shingles Composition roof shingles made from asphalt-impregnated felt covered with mineral granules.

Assessed value A value set by governmental assessors to determine tax assessments.

Atrium An open court within a building.

Attic The space between the roof and the ceiling.

Awning window An out-swinging window hinged at the top.

Backfill Earth used to fill in areas around exterior foundation walls.

Backhearth The part of the hearth inside the fireplace.

Baffle A partial blocking against a flow of wind or sound.

Balcony A deck projecting from the wall of a building above the ground.

Balloon framing The building-frame construction in which each of the studs is one piece from the foundation to the roof of a two-story house.

Balustrade A series of balusters or posts connected by a rail, generally used for porches and balconies.

Banister A handrail.

Base The finish of a room at the junction of the walls and floor.

Baseboard The finish board covering the interior wall where the wall and floor meet.

Base course The lowest part of masonry construction.

Base line A located line for reference control purposes.

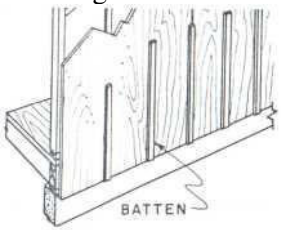
Basement The lowest story of a building, partially or entirely below ground.

Base plate A plate, usually of steel, upon which a column rests.

Base shoe A molding used next to the floor in interior baseboards.

Batt A blanket insulation material usually made of mineral fibers and designed to be installed between framing members.

Batten A narrow strip of board, used to cover cracks between the boards in board-and-batten siding.



Batter Sloping a masonry or concrete wall upward and backward from the perpendicular.

Batter boards Boards at exact elevations nailed to posts just outside the corners of a proposed building. Strings are stretched across the boards to locate the outline of the foundation.

Bay window A window projecting out from the wall of a building to form a recess in the room.

Beam A horizontal structural member that carries a load.

Beam ceiling A ceiling in which the ceiling beams are exposed to view.

Bearing plate A plate that provides support for a structural member.

Bearing wall or partition A wall supporting any vertical load other than its own weight.

Bench mark A metal or stone marker placed in the ground by a surveyor with the elevation on it. This is the reference point to determine lines, grades, and elevations in the area.

Bending moment A measure of the forces that break a beam by bending.

Bent A frame consisting of two supporting columns and a girder or truss used in vertical position in a structure.

Bevel siding Shingles or other siding board thicker on one edge than the other. The thick edge overlaps the thin edge of the next board.

Bib A threaded faucet allowing a hose to be attached.

Bill of material A parts list of material accompanying a structural drawing.

Blanket insulation Insulation in rolled-sheet form, often backed by treated paper that forms a vapor barrier.

Blocking Small wood framing members that fill in the open space between the floor and ceiling joists to add stiffness to the floors and ceiling.

Blueprint An architectural drawing used by workers to build from. The original drawing is transferred to a sensitized paper that turns blue with white lines when printed. Also, prints of blue lines on white paper.

Board measure A system of lumber measurement having as a unit a board foot. One board foot is the equivalent of 1 foot square by 1 inch thick.

Brace Any stiffening member of a framework.

Braced framing Frame construction with posts and braces used for stiffening. More rigid than balloon framing.

Breezeway A roofed walkway with open sides. It connects the house and garage. If large enough, it can be used as a patio.

Broker An agent in buying and selling property.

BTU Abbreviation for British thermal unit, a standard unit for measuring heat gain or loss.

Buck Frame for a door, usually made of metal, into which the finished door fits.

Building code A collection of legal requirements for buildings designed to protect the safety, health, and general welfare of people who work and live in them.

Building line An imaginary line on a plot beyond which the building cannot extend.

Building paper A heavy, waterproof paper used over sheathing and sub floors to prevent passage of air and water.

Building permit A permit issued by a municipal government authorizing the construction of a building or structure.

Built-up beam A beam constructed of smaller members fastened together.

Built-up roof A roofing male-rial composed of several lasers of fell and asphalt.

Butterfly roof A roof with two sides sloping down tow cud the interior ot the house.

Butt joint A joint formed by placing the end of one member against another member.

Buttress A mass of masonry projecting beyond a wall to take thrust or pressure. A projection from a wall to create additional strength and support.

BX cable Armored electric cable wrapped in plastic and protected by a flexible steel covering.

Cabinet work The finish interior woodwork**.**

Canopy A projection over windows and doors to protect them from the weather.

Cantilever A projecting member supported only at one end.

Cant strip An angular board used to eliminate a sharp right angle on roofs or flashing.

Carport An automobile shelter not fully enclosed.

Carriage The horizontal part of the stringers of a stair that supports the treads.

Casement window A hinged window that opens out, usually made of metal.

Casing A metal or wooden member around door and window openings to give a finished appearance.

Catch basin An underground structure for drainage into which the water from a roof or floor will drain. It is connected with a sewer or drain.

Caulking A waterproof material used to seal cracks.

Cavity wall A hollow wall usually made up of two brick walls built a few inches apart and joined together with brick or metal ties.

Cedar shingles Roofing and siding shingles made from western red cedar.

Cement A masomy adhesive material purchased in the form of pulverized powder. Any substance used in its soft state to join other materials together and which afterward dries and hardens.

Central heating A single source of heat that is distributed by pipes or ducts.

Certificate of title A document given to the home buyer with the deed, stating that the title to the property named in the deed is clearly established.

Cesspool A pit or cistern to hold sewage.

Chalk line A string that is heavily chalked, held tight, then plucked to make a straight guideline against boards or other surfaces.

Chase A vertical space within a building for ducts, pipes, or wires.

Checks Splits or cracks in a board, ordinarily caused by seasoning.

Check valve A valve that permits passage through a pipe in only one direction.

Chimney A vertical flue for passing smoke and gases outside a building.

Chimney stack A group of flues in the same chimney.

Chord The principal members of a roof or bridge truss. The upper members are indicated by the term *upper chord.* The lower members are identified by the term *lower chord.*

Cinder block A building block made of cement and cinder.

Circuit The path of an electric current. The closed loop of wire in which an electric current can flow.

Circuit breaker A device used to open and close an electrical circuit.

Cistern A tank or other reservoir to store rainwater that has run off the roof.

Clapboard A board, thicker on one side than the other, used to overlap an adjacent board to make house siding.

Clearance A clear space to allow passage.

Clerestory A set of high windows often above a roof line.

Clinch To. bend over the protruding end of a nail.

Clip A small connecting angle used for fastening various members of a structure.

Collar beam A horizontal member fastening opposing rafters below the ridge in roof framing.

Column In architecture: a perpendicular supporting member, circular in section; in engineering: a vertical structural member supporting loads acting on or near and in the direction of its longitudinal axis.

Common wall A wall that serves two dwelling units.

Compression A force that tends to make a member fail because of crushing.

Concrete A mixture of cement, sand, and gravel with water.

Concrete block Precast hollow or solid blocks of concrete.

Condemn To legally declare unfit for use.

Condensation The formation of frost or drops of water on inside walls when warm vapor inside a room meets a cold wall or window.

Conductor In architecture: a drain pipe leading from the roof; in electricity: anything that permits the passage of an electric current.

Conductor pipe A round, square, or rectangular metal pipe used to lead water from the roof to the sewer.

Conduit A channel built to convey water or other fluids; a drain or sewer. In electrical work, a channel that carries wires for protection and for safety.

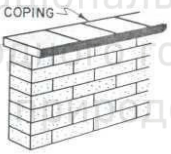
Construction loan A mortgage loan to be used to pay for labor and materials going into the house. Money is usually advanced to the builder as construction progresses and is repaid when the house is completed and sold.

Continuous beam A beam that has three or more supports.

Contractor A person offering to build for a specified sum of money.

Convector A heat-transfer surface that uses convection currents to transfer heat.

Coping The top course of a masonry wall that projects to protect the wall from the weather.



Corbel A projection in a masonry wall made by setting courses beyond the lower ones.

Corner bead A metal molding built into plaster corners to prevent the accidental breaking off of the plaster.

Cornice The part of a roof that projects out from the wall.

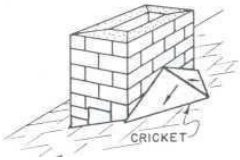
Counterflashing A flashing used under the regular flashing.

Course A continuous row of stone or brick of uniform height.

Court An open space surrounded partly or entirely by a building.

Crawl space The shallow space below the floor of a house built above the ground. It is surrounded by the foundation walls.

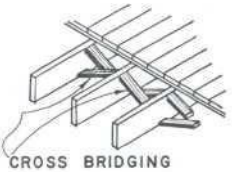
Cricket A roof device used at intersections to divert water.



Cripple A structural member that is cut less than full length, such as a studding piece above a window or door.

Cross bracing Boards nailed diagonally across studs or other boards to make framework rigid.

Cross bridging Bracing between floor joists to add stiffness to the floors.



CROSS BRIDGING

Crosshatch Lines drawn closely together at an angle of 45 degrees, to show a section cut.

Cull Building material rejected as below standard grade.

Culvert A passage for water below ground level.

Cupola A small structure built on top of a roof.

Curb A very low wall.

Cure To allow concrete to dry slowly by keeping it moist to allow maximum strength.

Curtain wall An exterior wall that provides no structural support.

Damp course A layer of waterproof material.

Damper A movable plate that regulates the draft of a stove, fireplace, or furnace.

Datum A reference point of starting elevations used in mapping and surveying.

Deadening Construction intended to prevent the passage of sound.

Dead load All the weight in a structure made up of unmovable materials. See also Loads.

Decay The disintegration of wood through the action of fungi.

Dehumidify To reduce the moisture content in the air.

Density The number of people living in a calculated area of land such as a square mile or square kilometer.

Depreciation Loss of value.

Designer A person who designs houses but is not a registered architect.

Detail To provide specific instruction with a drawing, dimensions, notes, or specifications.

Dimension building material Building material that has been precut to specific sizes.

Dimension line A line with arrowheads at either end to show the distance between two points.

Dome A hemispherical roof form.

Doorstop The strips on the doorjambs against which the door closes.

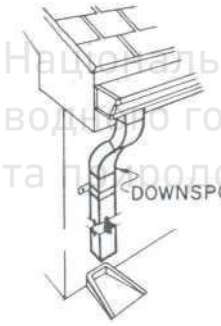
Dormer A structure projecting from a sloping roof to accommodate a window.

Double glazing A pane made of two pieces of glass with air space between and sealed to provide insulation.

Double header Two or more timbers joined for strength.

Double-hung A window having top and bottom sashes each capable of movement up and down.

Downspout A pipe for carrying rainwater from the roof to the ground.



Drain A pipe for carrying waste water.

Dressed lumber Lumber machined and smoothed at the mill. Usually $\frac{1}{2}$ inch less than nominal (rough) size.

Drip A projecting construction member or groove below the member to prevent rainwater from running down the face of a wall or to protect the bottom of a door or window from leakage.

Dry rot A term applied to many types of decay, especially an advanced stage when the wood can be easily crushed to a dry powder. The term is actually inaccurate because all fungi require considerable moisture for growth.

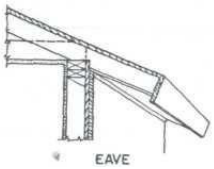
Dry-wall construction Interior wall covering other than plaster, usually referred to as gypsum-board surfacing.

Dry well A pit located in porous ground and lined with rock that allows water to seep through the pit. Used for the disposal of rainwater or the effluent from a septic tank.

Ducts Sheet-metal conductors for warm- and cold-air distribution.

Easement The right to use land owned by another, such as a utility company's right-of-way.

Eave That part of a roof that projects over a wall.

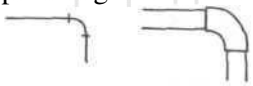


Efflorescence Whitish powder that forms on the surface of bricks or stone walls due to evaporation of moisture containing salts.

Effluent The liquid discharge from a septic tank after bacterial treatment.

Elastic limit The limit to which a material can be bent or pulled out of shape and still return to its former shape and dimensions.

Elbow An L-shaped pipe fitting.



Elevation The drawings of the front, side, or rear face of a building.

Ell An extension or wing of a building at right angles to the main section.

Embellish To add decoration.

Eminent domain The right of the local government to condemn for public use.

Enamel Paint with a considerable amount of varnish. It produces a hard, glossy surface.

Equity The interest in or value of real estate the owner has in excess of the mortgage indebtedness.

Escutcheon The hardware on a door to accommodate the knob and keyhole.

Excavation A cavity or pit produced by digging the earth in preparation for construction.

Fabrication Work done on parts of a structure at the factory before delivery to the building site.

Facade The face or front elevation of a building.

Face brick A brick used on the outside face of a wall.

Facing A finish material used to cover another.

Fascia A vertical board nailed on the ends of the rafters. It is part of the cornice.

Fatigue A weakening of structural members.

Federal Housing Administration (FHA) A government agency that insures loans made by regular lending institutions.

Felt papers Papers, sometimes tar-impregnated, used on roofs and side walls to give protection against dampness and leaks.

Fenestration The arrangement of windows.

Fiberboard A building board made with fibrous material – used as an insulating board.

Filled insulation A loose insulating material poured from bags or blown by machines into walls.

Finish lumber Dressed wood used for building trim.

Firebrick A brick that is especially hard and heat-resistent. Used in fireplaces.

Fireclay A grade of clay that can withstand a large quantity of heat. Used for firebrick.

Fire cut The angular cut at the end of a joist designed to rest on a brick wall.

Fire door A door that will resist fire.

Fire partition A partition designed to restrict the spread of fire.

Fire stop Obstruction across air passages in buildings to prevent the spread of hot gases and flames. A horizontal blocking between wall studs.

Fished A splice strengthened by metal pieces on the sides.

Fixed light A permanently sealed window.

Fixture A piece of electric or plumbing equipment.

Flagging Cut stone, slate, or marble used on floors.

Flagstone Flat stone used for floors, steps, walks, or walls.

Flashing The material used for and the process of making watertight the roof intersections and other exposed places on the outside of the house.

Flat roof A roof with just enough pitch to let water drain.

Flitch beam A built-up beam formed by a metal plate sandwiched between two wood members and bolted together for additional strength.

Floating Spreading plaster, stucco, or cement on walls or floors with use of a tool called a float.

Floor plan The top view of a building at a specified floor level. A floor plan includes all vertical details at or above win-dowsill levels.

Floor plug An electrical outlet flush with the floor.

Flue The opening in a chimney through which smoke passes.

Flue lining Terra-cot ta pipe used for the inner lining of chimneys.

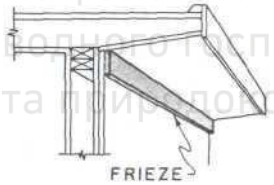
Flush surface A continuous surface without an angle.

Footing An enlargement at the lower end of a wall, pier, or column, to distribute the load into the ground.

Footing form A wooden or steel structure placed around the footing that will hold the concrete to the desired shape and size.

Framing (western) The wood skeleton of a building.

Frieze The flat board of cornice trim that is fastened to the wall.



Frost line The depth of frost penetration into the soil.

Fumigate To destroy harmful insect or animal life with fumes.

Furring Narrow strips of board nailed upon walls and ceilings to form a straight surface for the purpose of attaching wallboards or ceiling tile.

Fuse A strip of soft metal inserted in an electric circuit and designed to melt and open the circuit should the current exceed a predetermined value.

Gable The triangular end of an exterior wall above the eaves.

Gable roof A roof that slopes from two sides only.

Galvanize A lead and zinc bath treatment to prevent rusting.

Gambrel roof A symmetrical roof with two different pitches or slopes on each side.

Garret An attic.

Girder A horizontal beam supporting the floor joists.

Glazing Placing of glass in windows or doors.

Grade The level of the ground around a building.

Gradient The slant of a rod, piping, or the ground, expressed in percent.

Graphic symbols Symbolic representations used in drawing that simplify presentations of complicated items.

Gravel stop A strip of metal with a vertical lip used to retain the gravel around the edge of a built-in roof.

Green lumber Lumber that still contains moisture or sap.

Ground Fault Circuit Interrupter (GFCI) An electrical device that breaks an electric circuit when an excessive leakage current is detected. Intended to eliminate shock hazards to people.

Grout A thin cement mortar used for leveling and filling masonry holes.

Gusset A plywood or metal plate used to strengthen the joints of a truss.

Gutter A trough for earning off water.

Gypsum board A board made of plaster with a covering of paper.

Half timber A frame construction of heavy timbers in which the spaces are filled in with masonry.

Hanger An iron strap used to support a joist beam or pipe.

Hardpan A compacted layer of soils.

Head The upper frame on a door or window.

Header The horizontal supporting member above openings that serves as a lintel. Also one or more pieces of lumber supporting ends of joists. Used in framing openings of stairs and chimneys.

Headroom The clear space between floor line and ceiling, as in a stairway.

Hearth That part of the floor directly in front of the fireplace, and the floor inside the fireplace on which the fire is built. It is made of fire-resistant masonry.

Heel plate A plate at the ends of a truss.

Hip rafter The diagonal rafter that extends from the plate to the ridge to form the hip.

Hip roof A roof with four sloping sides.

House drain Horizontal sewer piping within a building that receives wastes from the soil stacks.

House sewer The watertight soil pipe extending from the exterior of the foundation wall to the public sewer.

Humidifier A mechanical device that controls the amount of water vapor to be added to the atmosphere.

Humidistat An instrument used for measuring and controlling moisture in the air.

I beam A steel beam with an I-shaped cross section.

Indirect lighting Artificial light that is bounced off ceiling and walls for general lighting.

Insulating board Any board suitable for insulating purposes, usually manufactured board made from vegetable fibers, such as fiberboard.

Insulation Materials for obstructing the passage of sound, heat, or cold from one surface to another.

Interior trim General trim for all the finish molding, casing, baseboard, etc.

Jack rafter A short rafter, usually used on hip roofs.

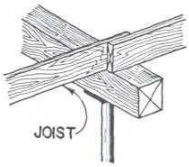
Jalousie A type of window consisting of a number of Ions, thin, hinged panels.

Jamb The sides of a doorway or window opening.

Jerry-built Poorly constructed.

Joints The meeting of two separate pieces of material for a common bond.

Joist A horizontal structural member that supports the floor system or ceiling system.



Kalamein door A fireproof door with a metal covering.

Keystone The top, wedge-shaped stone of an arch.

Kiln A heating chamber for drying lumber.

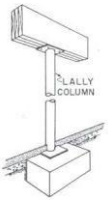
King post In a roof truss, the central upright piece.

Knee brace A corner brace, fastened at an angle from wall stud to rafter, stiffening a wood or steel frame to prevent angular movement.

Knee wall Low wall resulting from one-and-one-half-story construction.

Knob and tube Electric wiring through walls where insulated wires are supported with porcelain knobs and tubes when passing through wood construction members.

Lally column A steel column used as a support for girders and beams.



Laminated beam A beam made by bonding together several layers of material.

Landing A platform in a flight of steps.

Landscape architect A professional person who utilizes and adapts land for people's use.

Lap joint A joint produced by lapping two pieces of material.

Lath (metal) Sheet-metal screening used as a base for plastering.

Lath (wood) A wooden strip nailed to studding and joists to which plaster is applied.

Lattice A grille or openwork made by crossing strips of wood or metal.

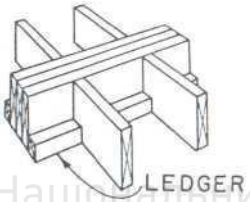
Lavatory A washbasin or a room equipped with a washbasin.

Leaching bed A system of trenches that carries wastes from sewers. It is constructed in sandy soils or in earth filled with stones or gravel.

Leader A vertical pipe or downspout that carries rainwater from the gutter to the ground.

Lean-to A shed whose rafters lean against another building or other part of the same building.

Ledger A wood strip nailed to the lower side of a girder to provide a bearing surface for joists.



Lessee The tenant who holds a lease.

Lessor The owner of leased property.

Lien A legal claim on a property that may be exercised in default of payment of a debt. Lineal foot A measurement of 1 foot along a straight line.

Lintel A horizontal piece of wood, stone, or steel across the top of door and window openings to bear the weight of the walls above the opening.

Loads Live load: the total of all moving and variable loads that may be placed upon a building. Dead load: the weight of all permanent, stationary construction included in a building.

Load-bearing walls Walls that support weight from above as well as their own weight.

Loggia A roofed, open passage along the front or side of a building. It is often at an upper level, and it often has a series of columns on either or both sides.

Lookout A horizontal framing member extending from studs out to end of rafters. Lot line The line forming the legal boundary of a piece of property.

Louver A set of fixed or movable slats adjusted to provide both shelter and ventilation.

Mansard roof A roof with two slopes on each side, with the lower slope much steeper than the upper.

Mantel A shelf over a fireplace.

Market price The amount that property can be sold for at a given time.

Market value The amount that property is worth at a given time.

Masonry Anything built with stone, brick, tiles, or concrete.

Meeting rail The horizontal rails of a double-hung sash that fit together when the window is closed.

Member A single piece in structure that is complete in itself.

Metal tie A strip of metal used to fasten construction members together.

Metal wall ties Strips of corrugated metal used to tie a brick veneer wall to framework.

Mildew A mold on wood caused by fungi.

Millwork The finish woodwork in a building, such as cabinets and trim.

Mineral wool An insulating material made into a fibrous form from mineral slag.

Modular construction Construction in which the size of the building and the building materials are based on a common unit of measure.

Moisture barrier A material such as specially treated paper that retards the passage of vapor or moisture into walls and prevents condensation within the walls.

Monolithic Concrete construction poured and cast in one piece without joints.

Monument A boundary marker set by surveyors to locate property lines.

Mortar A mixture of cement, sand, and water, used as a bonding agent by the mason for binding bricks and stone.

Mortgage A pledging of property, conditional on payment of the debt in full.

Mortgagee The lender of money to the mortgagor.

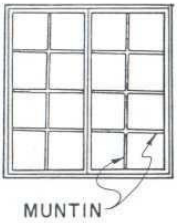
Mortgagor The owner who mortgages property in return for a loan.

Mosaic Small colored tile, glass, stone, or similar material arranged on an adhesive ground to produce a decorative surface.

Mud room A small room or en-tranceway where muddy overshoes and wet garments can be removed before entering other rooms.

Mullion A vertical bar in a window that separates the window into sections.

Muntin A small bar separating the glass lights in a window.



Newel A post supporting the handrail at the top or bottom of a stairway.

Nominal dimension Dimensions for finished lumber in which the stated dimension is usually larger than the actual dimension. These dimensions are usually larger by an amount required to smooth a board.

Nonbearing wall A dividing wall that does not support a vertical load other than its own weight.

Nonferrous metal Metal containing no iron, such as copper, brass, or aluminum.

Nosing The rounded edge of a stair tread.

Obscure glass Sheet glass that is made translucent instead of transparent.

On center Measurement from the center of one member to the center of another (noted *oc).*

Open-end mortgage A mortgage that permits the remaining amount of the loan to be increased, as for improvements, by mutual agreement of the lender and borrower, without rewriting the mortgage.

Orientation The positioning of a house on a lot in relation to the sun, wind, view, and noise.

Outlet Any kind of electrical box allowing current to be drawn from the electrical system for lighting or appliances.

Overhang The horizontal distance that a roof projects beyond a wall.

Panelboard The center for controlling electrical circuits.

Parapet A low wall or railing around the edge of a roof.

Parging A thin coat of plaster applied to masonry surfaces for smoothing purposes.

Parquet flooring Flooring, usually of wood, laid in an alternating or inlaid pattern to form various designs.

Partition An interior wall that separates two rooms.

Party wall A wall between two adjoining buildings in which both owners share, such as common wall between row houses.

Patio An open court.

Pediment The triangular space forming the gable end of a low-pitched roof. A similar form is often used as a decoration over doors in classic architecture.

Penny A term for the length of a nail, abbreviated *d.*

Periphery The entire outside edge of an object.

Perspective A drawing of an object in a three-dimensional form on a plane surface. An object drawn as it would appear to the eye.

Pier A block of concrete supporting the floor of a building.

Pilaster A portion of a square column, usually set within or against a wall for the purpose of strengthening the wall. Also a decorative column attached to a wall.

Piles Long posts driven into the soil in swampy locations, or whenever it is difficult to secure a firm foundation, upon which the foundation footing is laid.

Pillar A column used for supporting parts of a structure.

Pinnacle Projecting or ornamental cap on the high point of a roof.

Plan A horizontal, graphic representational section of a building, showing the walls, doors, windows, stairs, chimneys, and surrounding objects as walks and landscape.

Planks Material 2 or 3 inches (50 or 75 mm) thick and more than 4 inches (100 mm) wide, such as joists, flooring, and the like.

Plaster A mortarlike composition used for covering walls and ceilings. Usually made of port-land cement mixed with sand and water.

Plasterboard A board made of plastering material covered on both sides with heavy paper. It is often used instead of plaster. Also called gypsum board.

Plaster ground A nailer strip included in plaster walls to act as a gage for thickness of plaster and to give a nailing support for finish trim around openings and near the base of the wall.

Plat A map or chart of an area showing boundaries of lots and other pieces of property.

Plate The top horizontal member of a row of studs in a frame wall to earn[1] the trusses of a roof or to carry the rafters directly. Also a shoe or base member, as of a partition or other frame.

Plate cut The cut in a rafter that rests upon the plate. It is also called the *seat cut* or *bird-mouth.*

Plate glass A high-quality sheet of glass used in large windows.

Platform or Western Framing Multistory house framing in which each story is built upon the other.

Plenum system A system of heating or air conditioning in which the air is forced through a chamber connected to distributing ducts.

Plot The land on which a building stands.

Plow To cut a groove running in the same direction as the grain of the wood.

Plumb Said of an object when it is in true vertical position as determined by a plumb bob.

Plywood A piece of wood made of three or more layers of veneer joined with glue and usually laid with the grain of adjoining piles at right angles.

Porch A covered area attached to a house at an entrance.

Portico A roof supported by columns, whether attached to a building or wholly by itself.

Portland cement A hydraulic cement, extremely hard, formed by burning silica, lime, and alumina together and then grinding up the mixture.

Post A perpendicular supporting member.

Post-and-beam construction Wall construction consisting of posts rather than studs.

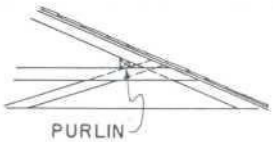
Precast Concrete shapes made separately before being used in a structure.

Prefabricated houses Houses that are built in sections or component parts in a factors', and then assembled at the site.

Primary coat The first coat of paint.

Principal The original amount of money loaned.

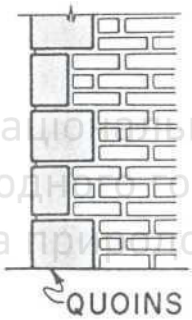
Purlin A structural member spanning from truss to truss and supporting the rafters.



Quad An enclosed court.

Quarry tile A machine-made, unglazed tile.

Quoins Large squared stones set in the corners of a masonry building foi" appearance.



Radiant heating A system using heating elements in the floors, ceilings, or walls to radiate heat into the room.

Rafters Structural members used to frame a roof. Several types are common: hip, jack, valley, and cripple.

Raglin The open joint in masonry to receive flashing.

Realtor A real-estate broker who is a member of a local chapter of the National Association of Real Estate Boards.

Register The open end of a duct in a room for warm or cool air.

Reinforced concrete Concrete in which steel bars or webbing has been embedded for strength.

Rendering The art of shading or coloring a drawing.

Restoration Rebuilding a structure so it will appear in its original form.

Restrictions Limitations on the use of real estate as set by law or contaned in a deed.

Retaining wall A wall to hold back an earth embankment.

Rheostat An instrument for regulating electric current.

Ribbon A support for joists. A board set into studs that are cut to support joists.

Ridge The top edge of the roof where two slopes meet.

Ridge cap A wood or metal cap used over roofing at the ridge.

Riprap Stones placed on a slope to prevent erosion. Also broken stone used for foundation fill.

Rise The vertical height of a roof.

Riser The vertical board in a stairway between two treads.

Rock wool An insulating material that looks like wool but is composed of suchsubstances as granite or silica.

Rodding Stirring freshly poured concrete with a vibrator to remove air pockets.

Roll roofing Roofing material of fiber and asphalt.

Rough floor The sub floor on which the finished floor is laid.

Rough hardware All the hardware used in a house, such as nails and bolts, that cannot be seen in the completed house.

Roughing in Putting up the skeleton of the building.

Rough lumber Lumber as it comes from the saw.

Rough opening Any unfinished opening in the framing of a building.

Run Stonework having irregular-shaped units and no indicalion of systemic course work. The horizontal distance covered by a (light of stairs. The length of a rafter.

Saddle The ridge covering of a roof designed to carry water from the back of chimneys. Also called a *cricket.* A threshold.

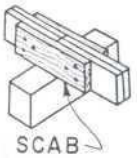
Safety factor The ultimate strength of the material divided by the allowable working load. The element of safety needed to make certain that there will be no structural failures.

Sand finish A final plaster coat; a skim coat.

Sap All the fluids in a tree.

Sash The movable framework in which window panes are set.

Scab A small wood member, used to join other members, which is fastened on the outside face.



Scarfing A joint between two pieces of wood that allows them to be spliced lengthwise.

Schedule A list of parts or details.

Scratch coat The first coat of plaster. It is scratched to provide a good bond for the next coat.

Screed A guide for the correct thickness of plaster or concrete being placed on surfaces.

Scuttle A small opening in a ceiling to provide access to an attic or roof.

Seasoning Drying out of green lumber, either in an oven or kiln or by exposing it to air.

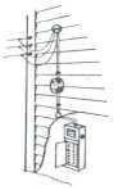
Second mortgage A mortgage made by a home buyer to raise money for a down payment required under the first mortgage.

Section The drawing of an object that is cut to show the interior. Also, a panel construction used in walls, floors, ceilings, or roofs.

Seepage pit A pit or cesspool into which sewage drains from a septic tank, and which is so constructed that the liquid waste seeps through the sides of the pit into the ground.

Septic tank A concrete or steel tank where sewage is reduced partially by bacterial action. About half the sewage solids become gases that escape back through the vent stack in the house. The other solids and liquids flow from the tank into the ground through a tile bed.

Service connection The electric wires to the building from the outside power lines.



Set The hardening of cement or plaster.

Setback A zoning restriction on the location of the home on a lot.

Settlement Compression of the soil or the members in a structure.

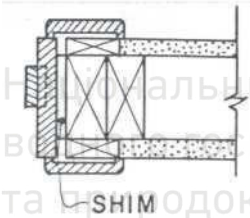
Shakes Thick hand-cut shingles.

Sheathing The structural covering of boards or wallboards, placed over exterior studding or rafters of a structure.

Sheathing paper A paper barrier against wind and moisture applied between sheathing and outer wall covering.

Shed roof A flat roof slanting in one direction.

Shim A piece of material used to level or fill in the space between two surfaces.



Shingles Thin pieces of wood or other materials that overlap each other in covering a roof. The number and kind needed depend on the steepness of the roof slope and other factors. Kinds of shingles include tile, slate shingles, and asphalt shingles.

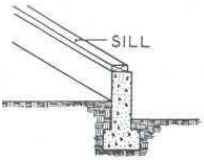
Shiplap Boards with lapped joints along their edges.

Shoe mold The small mold against the baseboard at the floor.

Shoring Lumber placed in a slanted position to support the structure of a building temporarily.

Siding The outside boards of an exterior wall.

Sill The horizontal exterior member below a window or door opening. Also the wood member placed directly on top of the foundation wall in wood-frame construction.

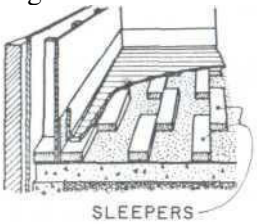


Skeleton construction Construction where the frame carries all the weight.

Skylight An opening in the roof for admitting light.

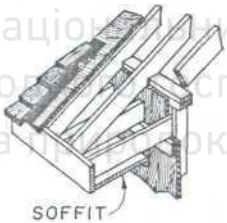
Slab foundation A reinforced concrete floor and foundation system.

Sleepers Strips of wood, usually 2×2's, laid over a slab floor to which finished wood Mooring is nailed.



Smoke chamber The portion of a chimney flue located directly лег the fireplace.

Soffit The undersurface of a projecting structure.



Softwood Wood from trees having needles rather than broad leaves. The term does not necessarily refer to the softness of the wood.

Soil stack The main vertical pipe that receives waste from all fixtures.

Solar heat Heat from the sun's rays.

Sole The horizontal framing member directly under the studs,

Spacing The distance between structural members.

Spackle To cover wallboard joints with plaster.

Span The distance between structural supports.

Specification The written or printed direction regarding the details of a building or other construction.

Spike A large, heavy nail.

Splice Joining of two similar members in a straight line.

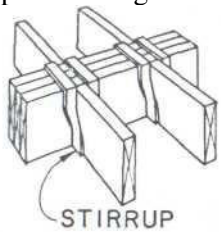
Stack A vertical pipe.

Stakeout Marking the foundation layout with stakes.

Steel framing Skeleton framing with structural steel beams.

Steening Brickwork without mortar.

Stile A vertical member of a door, window, or panel. Stirrup A metal U-shaped strap used to support framing members .



Stock Common sizes of building materials and equipment available from most commercial industries.

Stool An inside windowsill.

Stop A small strip to hold a door or window sash in place.

Storm door or window An extra door or extra window placed outside an ordinary door or window for added protection against cold.

Storm sewer A sewer that is designed to carry away water from storms, but not sewage.

Stress Any force acting upon a part or member used in construction.

Stress-cover construction Construction consisting of panels or sections with wood frameworks to which plywood or other sheet material is bonded with glue so that the covering carries a large part of the loads.

Stretcher course A row of masonry in a wall with the long side of the units exposed to the exterior.

Stringer One of the sides of a flight of stairs. The supporting member cut to receive the treads and risers.

Stripping Removal of concrete forms from the hardened concrete.

Stucco Any of various plasters used for covering walls, especially an exterior wall covering in which cement is used.

Stud Upright beams in the framework of a building. Usually referred to as 2×4's, and spaced at 16 inches from center to center.

Subfloor The rough flooring under the finish floor that rests on the floor joists.

Sump A pit in a basement floor to collect water, into which a sump pump is placed to remove the water through sewer pipes.

Surfaced lumber Lumber that is dressed by running it through a planer.

Surveyor A person skilled in land measurement.

Swale A drainage channel formed where two slopes meet.

T

Tamp To ram and concentrate soil.

Tar A dark heavy oil used in roofing and roof surfacing.

Tempered Thoroughly mixed cement or mortar.

Tensile strength The greatest stretching stress a structural member can bear without breaking or cracking.

Termite shield Sheet metal used to block the passage of termites.

Thermal conductor A substance capable of transmitting heat.

Thermostat A device for automatically controlling the supply of heat.

Threshold The beveled piece of stone, wood, or metal over which the door swings. It is sometimes called a carpet strip, or a saddle.

Throat A passage directly above the fireplace opening where a damper is set.

Tie A structural member used to bind others together.

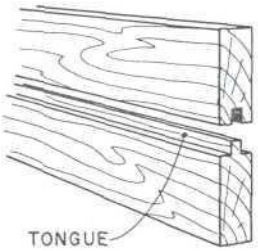
Timber Lumber with a cross section larger than 4 by 6 inches (100 by 150 mm), for posts, sills, and girders.

Title insurance An agreement to pay the buyer for losses in title of ownership.

Toe nail To drive nails at an angle.

Tolerance The acceptable variance of dimensions from a standard size.

Tongue A projection on the edge of wood that joins with a similarly shaped groove.



Total run The total of all the tread widths in a stair.

Transom A small window over a door.

Tread The step or horizontal member of a staii.

Trimmers Single or double joists or rafters that run around an opening in framing construction.

Truss A triangular-shaped unit for supporting roof loads over long spans.

Underpinning A foundation replacement or reinforcement for temporary braced supports.

Undressed lumber Lumber that is not squared or finished smooth.

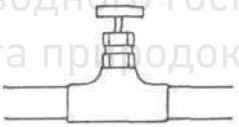
Unit construction Construction that includes two or more preassembled walls, together with floor and ceiling construction, for shipment to the building site.

Valley The internal angle formed by the two slopes of a roof.

Valley jacks Rafters that run from a ridgeboard to a valley rafter.

Valley rafter The diagonal rafter forming the intersection of two sloping roofs.

Valve A device that regulates the flow of material in a pipe.



VALVE

Vapor barrier A watertight material used to prevent the passage of moisture or water vapor into and through walls.

Veneer A thin covering of valuable material over a less expensive material.

Vent A screened opening for ventilation.

Ventilation The process of supplying and removing air by natural or mechanical means to or from any space.

Vent pipes Small ventilating pipes extending from each fixture of a plumbing system to the vent stack.

Vent stack The upper portion of a soil or waste stack above the highest fixture.

Vergeboard The board that serves as the eaves finish on the gable end of a building.

Vestibule A small lobby or entrance room.

Vitreous Pertaining to a composition of materials that resemble glass.

Volume The amount of space occupied by an object. Measured in cubic units.

W

Wainscot Facing for the lower part of an interior wall.

Wallboard Wood pulp, gypsum, or similar materials made into large rigid sheets that may be fastened to the frame of a building to provide a surface finish.

Warp Any change from a true or plane surface. Warping includes bow, crook, cup, and twist.

Warranty deed A guarantee that the property is as promised.

Wash The slant upon a sill, capping, etc., to allow the water to run off.

Waste stack A vertical pipe in a plumbing system that carries the discharge from any fixture.

Waterproof Material or construction that prevents the passage of water.

Water table A projecting mold near the base on the outside of a building to turn the rainwater outward. Also the level of subterranean water.

Watt A unit of electrical energy.

Weathering The mechanical or chemical disintegration and discoloration of the surface of exterior building materials.

Weather strip A strip of metal or fabric fastened along the edges of windows and doors to reduce drafts and heat loss.

Weep hole An opening at the bottom of a wall to allow the drainage of water.

Well opening A floor opening for a stairway.

Z

Zoning Building restrictions as to size, location, and type of structures to be built in specific areas.

T E S T K E Y S

Test № 1 (Units 1,2,3).

1 *– 1;* ***2*** *– 2;* ***3*** *– 2;* ***4*** *– 2;* ***5*** *– 2;* ***6*** *– 2;* ***7*** *– 1;* ***8*** *– 2;* ***9*** *– 2;* ***10*** *– 2;* ***11*** *– 2;* ***12*** *– 2;* ***13*** *– 1;* ***14*** *– 3;* ***15*** *– 2;* ***16*** *– 2;* ***17*** *– 3;* ***18*** *– 1;* ***19*** *– 3;* ***20*** *– 1.*

Test № 2 (Units 4,5,6).

1 *– 3;* ***2*** *– 3;* ***3*** *– 3;* ***4*** *– 2;* ***5*** *– 2;* ***6*** *– 2;* ***7*** *– 2;* ***8*** *– 2;* ***9*** *– 1;* ***10*** *– 1;* ***11*** *– 1;* ***12*** *– 3;* ***13*** *– 2;* ***14*** *– 1;* ***15*** *– 1;* ***16*** *– 1;* ***17*** *– 2;* ***18*** *– 2;* ***19*** *– 1;* ***20*** *– 1;* ***21*** *– 2;* ***22*** *– 1;* ***23*** *– 2;* ***24*** *– 3;* ***25*** *– 2;* ***26*** *– 1;* ***27*** *– 3;* ***28*** *– 1;* ***29*** *– 3;* ***30*** *– 3.*

Test № 3 (Units 7,8,9).

1 *– 1;* ***2*** *– 1;* ***3*** *– 3;* ***4*** *– 2;* ***5*** *– 3;* ***6*** *– 2;* ***7*** *– 1;* ***8*** *– 3;* ***9*** *– 3;* ***10*** *– 2;* ***11*** *– 3;* ***12*** *– 1;* ***13*** *– 3;* ***14*** *– 2;* ***15*** *– 3;* ***16*** *– 2;* ***17*** *– 1;* ***18*** *– 1;* ***19*** *– 1;* ***20*** *– 2;* ***21*** *– 1;* ***22*** *– 2;* ***23*** *– 2;* ***24*** *– 1;* ***25*** *– 2;* ***26*** *– 3;* ***27*** *– 3;* ***28*** *– 3.*

Test № 4(Units 10,11).

1 *– 3;* ***2*** *– 3;* ***3*** *– 2;* ***4*** *– 3;* ***5*** *– 3;* ***6*** *– 1;* ***7*** *– 3;* ***8*** *– 2;* ***9*** *– 1;* ***10*** *– 1;* ***11*** *– 1;* ***12*** *– 1;* ***13*** *– 1;* ***14*** *– 3;* ***15*** *– 1;* ***16*** *– 2;* ***17*** *– 2;* ***18*** *– 1;* ***19*** *– 1;* ***20*** *– 2;* ***21*** *– 2;* ***22*** *– 1;* ***23*** *– 3;* ***24*** *– 2;* ***25*** *– 3;* ***26*** *– 1.*

Part II
Supplement I
Professionally oriented texts for autonomous studying and the development of communicative language competences

Be ready to carry out the following tasks while working on the texts:

1. Skim the text.
2. Write out the unknown words and terms and use your dictionary to find out their meaning.
3. Define the general subject of the text.
4. Ask questions to define the subject of each paragraph.
5. Annotate the text either in English or in Ukrainian.
6. Render the text in Ukrainian.
7. Translate the text into Ukrainian.
8. Write a presentation of the text.

Text 1. From the History of Construction in Ukraine

Early period. Construction is closely tied to the development of civilization and has a long history. The oldest remains of dwellings found in Ukraine date back to the late Paleolithic period. These remains of huts built about 15,000 years ago and consisting of large mammoth bones covered with hides were discovered in the village of Mizyn on the Desna in the Chernihiv region. In Neolithic times huts were dug deeply into the ground and were covered with a peaked roof of hides or bark. At the time of the Trypilian culture at beginning of the 3rd rnillenium BC settlements were built on hills or on riverbanks, mostly in Right-Bank Ukraine. The houses were rectangular and quite large (about 120 sq. m.) and were constructed of wood covered with a thick layer of clay.

In southern Ukraine defensive walls were built of stone or clay. Wooden structures were known too, remnants of which were found near the village of Mykhailivka in Kherson oblast.

In the Bronze and Iron ages and the Scythian period high earthworks and barrows, fortified settlements, and open farm settlements with dwellings made of branches and clay (middle Dnieper region, 5th century BC) were constructed.

Beginning in the 7th century BC high stone walls, residential buildings, and temples were built in the ancient states on the northern coast of the Black Sea such as Chersonese Taurica, Tyras, Olbia, and

Panticapeum. The building techniques of the ancient Greeks and then of the Romans and Byzantines later influenced construction in Ukrainian territories.

From the first half of the medieval period until the 10th century fortresses and fortified settlements were built of wood on elevated ground and were encircled with earthen walls and moats. Two story dwellings in which the lower story was used for storage were built in a circle and formed part of the fortifications. The settlements beyond the walls were inhabited by peasants, who lived in clay huts, and later by crafts people and merchants.

Princely period. Beginning in the second half of the 10th century stone construction developed in Kievan Rus' under the influence of Byzantine building techniques. "Churches, princely palaces, and boyars' villas were built of brick interlayed with cut stone. The arch was extensively applied. In Kievan Rus', construction reached its peak of development in the 11th-12th century, when the following were built: the Transfiguration Cathedral in Chernihiv (1036); in Kiev, the St Sophia Cathedral (1037), Dormition Cathedral of the Kievan Cave Monastery (1073-78), St Michael's Golden-Domed Monastery (1108), and the Transfiguration church in the Berestiv district (1113-25); and the Good Friday Church in Chernihiv (end of the 12th century). In contrast to these architectural monuments, the houses of artisans, burghers, and peasants remained primitive; they were built of wood in the forest regions and of clay in the steppe regions.

The typical city in the Princely era (Kyiv, Chernihiv, Lviv, Kamianets-Podilskyi, etc) developed on a radial plan around a nucleus consisting of a fortified citadel.

13th-16th century. In the 13th century the Mongols devastated cities and villages in Ukraine, which, given the political and economic decline of the 14th-15th century, could not be rebuilt immediately. In the 13th-16th century castle building developed rapidly: in Western Ukraine stone castles appeared in Lutsk, Kremianets, Khotyn, Kamianets-Podilskyi, and other cities. In the 15th century a fortress was built in Bilhorod-Dnistrovskyi, and a number of fortified monasteries (Monastery of the Holy Trinity in Mezhyrichia) and churches were constructed. In Lviv, where a builders' guild was formed, the Korniakt building (1571-80), the Dormition Church (1547-59), and other buildings were constructed,

17th-20th century. In the first half of the 17th century castles and

fortresses (Kodak, Bar, Brody, Kremenchuk) continued to be built in Right-Bank Ukraine. The French engineer G. de Beauplan distinguished himself in this field. In the mid-17th century the construction trades flourished in Left-Bank Ukraine: in Chernihiv, Lyzohub's villa and the refectory of the Holy Trinity Monastery were built; in Novhorod-Siverskyi, a collegium; in Kharkiv, the Cathedral of the Holy Protectress; and in Kyiv, the refectory of Vydubychi Monastery, the All Saints' Church above the Economic Gate of the Kievan Cave Monastery, and St Nicholas's Cathedral.

The vigorous urban construction in the 17th and at the beginning of the 18th century in Ukraine utilized Western architectural styles, such as the Renaissance style (the building of the Kievan Academy, 1703-40) and the baroque style (the metropolitan's residence in Kyiv). The Ukrainian baroque became the dominant style in this period and was used in many prominent buildings such as churches, monasteries, belfries, military chanceries, and officers' villas. The residences of Cossack officers and the clergy were spacious, built of wood or brick, and decorated with galleries and carved doors, window frames, and ceilings.

Text 2. Housing in Britain

Blocks of flats have offered greater scope for bold conceptions and architectural use of modern materials and methods than terraced, semi-detached or detached houses. In the new towns architects designing houses have had opportunity for variety of design within a general plan, and the same is true of larger local authority building schemes.

As the main demand has been for urban housing, development of ideas in planning and design since 1946 has been most noticeable in housing schemes.

Quality of design has been high in the new towns. Much thought was given to individual house design, to layout and grouping of houses, to landscaping and to community amenities or the relationship of houses to shopping centres, schools and other public buildings.

In large older towns much more thought than formerly has been given in recent building to such questions as orientation for sunlight, space between high blocks to allow daylight to reach the lowest floors, and to balanced mixing of tall, medium-height and low dwellings, of housing and public building of private and public open space. The uniformity and

monotony of a good deal of earlier building is now avoided. The trend towards concentration of siting has been made possible by the growth of the realisation that good urban surroundings make a town a better dwelling place than a sprawling dormitory suburb, that urban and rural living each have their own pleasures.

Much attention has been paid in the last five years to the details of town development, such as outbuildings, street furniture (lamps, traffic signs, kiosks, etc.), shop frontages, pedestrians facilities and noise abatement.

Building materials. The vast majority of houses built are of the brick and timber construction traditional in Great Britain, and stone has been used in certain districts, where it is at hand. Rendering, timber-boarding and tile hanging are also used. Roofs are normally of clay or concrete tiles, but roofing slate is used in certain districts, and some low-pitched roofs are covered with heavy-duty roofing felt. The trend towards the use of prefabrication is growing especially as regards the factory production of joinery, interior fittings, etc. more concrete is being used (for houses as well as blocks of flats) and productivity of hand labour on site is being increased by the use of power tools (e.g. power-driven barrows, pneumatic hammers, laminates, articulated conveyors.) New or substitute materials, such as plastic, laminates and glass fibre, are also finding a useful outlet in building construction.

The principal materials used in the construction of dwellings however, remain timber, bricks, roofing tiles, cement, sand and gravel, and, principally in the construction of flats, steel and reinforced concrete.

Non-traditional building. The difference between traditional and non-traditional building is more in the methods employed in making and erecting the component parts than in the actual materials used.

Traditional methods are based on the principle of an on-site operation where all the materials traditionally required for the building are first gathered together, such as bricks, cement, sand, ballast, timber, tiles, plaster, etc. They are then fashioned as required and put together with a labour force working on the open site. Non-traditional building may use new or the same basic traditional materials in new ways, employing new techniques in fixing and erection which differ, for instance, from the traditional method of laying by hand on brick, or concrete block, on top of another. In the main, new methods have been applied to alternative systems of walling, employing concrete posts and infilling panels; thin

concrete slabs supported on light structural steel framing; pre-assembled panels of brickwork; stressed-skin resin-bonded plywood panels, asbestos sheeting in varoius forms; curtain walling and the line. These are usually produced in a factory and transported to the site, requiring only to be placed and secured in position.

Although traditional methods will die hard the influence of new techniques are gradually making headway in present-day building practice especially in multi-storey buildings of all kinds and more particularly in school construction.

Text 3. Some Special Aspects of New Towns in Britain

According to the new town programme of Britain there are now – fifteen new towns – twelve in England and three in Scotland. In most of the new towns the new centres are taking shape as the hub round which the life of the community will revolve – several of them already house office blocks and civic buildings as well as the larger shops and multiple stores.

Essential public services – the telephone and postal services, the health services, the bus services, the fire service have been extended to deal with the increased numbers of people who use them.

Sites. The finding of sites for the new towns, originally planned for populations of between 50,000 and 60,000 was not easy. The ideal-site for a town of this size is said to be about 6,000 acres of stable land, with good drainage and plentiful supplies of water, near main roads and railways, and well situated for the needs of industry. Sometimes, when the site chosen had as its nucleus an existing town, village or group of villages, there was considerable local opposition to be overcome; sometimes the nature of the ground created serious engineering problems; sometimes the absence of a previous population meant that there was no local building force available so that labour had to be imported at considerable cost; sometimes communications were particularly poor.

Layout and design. The first step in the establishment of each new town – it did not matter whether it was to be created from the beginning, or to be greatly expanded, or simply to be completed on modern new town lines – was the preparation of a master plan for the whole area which was done in consultation with the responsible minister, any other interested Government department and the local authorities responsible

for the area in which the new town would lie.

Great attention has been paid to the natural characteristics and contours of the land, to the interrelation and grouping of buildings, to varying street patterns, to the best use of open space in the arrangement of gardens and greens as well as in the provision of parks and playing fields and to the preservation and planting of woodlands and individual trees.

Housing. Designers and architects have exercised considerable ingenuity in devising local street patterns that are often interesting to look at as well as fitted to contemporary needs, e.g. road safety requirements. Houses have been built at varying levels – some in terraces grouped and curved along footpaths and roads with wide grass verges, and others in squares, or round village greens; and sometimes, at strategic points in the layouts the basic materials traditional to the area have been combined with conventional modern materials, and contrasting facings and colours have been used.

Variety in house design extends even to houses of the same size and elevation: there are often differences in the measurements, arrangement and finish of the rooms.

Industrial development. Industrial development in the new towns has gone on steadily since 1948. The majority of towns have a fair variety of industry, although occasionally one industry predominates. The factory estates in the new towns have been so sited that while they do not encroach upon the neighbourhoods, they can be reached conveniently by bicycle or on foot. In design they share the characteristics of other new town development: both standard and made-to-measure factory buildings have been constructed in varying sizes to good effect and careful attention has been paid to landscaping, in the relation of one building to another, and in the position and appearance of the communicating roads.

Town centres. The town centres have provided the main opportunity for architectural adventure; all of them are interesting; one or two have excited special admiration, notably Stevenage, which is planned on the all-pedestrian principle, with traffic roads ringing the shopping core and ample car parks sited of the traffic roads.

All the town centres have been designed to contain the more important public buildings: the town hall, central post office, the public library, the health centre, the fire station and etc.

Public open spaces – parks, children's playgrounds and sports fields have been provided in all the towns.

Text 4. From the History of Architectural Structures

Architecture had its beginning when early humans first fashioned caves or lean-to shelters for their families. Architectural drafting and design began when these people first drew the outline of a shelter in the sand or dirt and planned the use of existing materials. As structures became more complex, the need for more complete drawings became necessary. But these architectural plans are far below today's standards. Their drawings are crude, and their measurements are not accurate.

An architect uses the knowledge gained from past centuries when designing a building today. The history of architectural design is directly related to progress in other areas of learning. For example, architecture has relied heavily upon the advancements of science and mathematics. From these advancements came new building materials and building methods. New engineering developments and new building materials have brought about more changes in architectural design in the last 30 years than had occurred in all the earlier history of architecture. Yet, many of the basic principles of modern architecture, such as bearing-wall construction and skeleton- frame construction, have been known for centuries. Even today, architectural structures are divided into two basic types, the bearing- wall and the skeleton-frame.

Bearing-Wall Construction. Bearing walls are solid and support themselves and the roof of a structure. Most early architecture, used the bearing wall for support. In fact, one of the first major problems in architectural drafting and design involved the bearing wall. The problem was how to provide openings in a supporting wall without sacrificing the needed support. One of the first solutions to this problem was the development of the post-and-lintel. In this type of construction, posts large enough to support the lintel (upper horizontal beam), wall, and roof above are used.

The ancient Greeks used post-and-lintel construction to erect many of their beautiful buildings. Most ancient people used stone as their primary building material. The great weight of the stone limited the application of post-and-lintel construction. Furthermore, stone post-and-lintel construction could not support wide openings. Therefore, many posts (columns) were placed close together, to provide the needed support. The

Greeks and Romans developed many styles of columns and gave names to them. The various styles of column designs were known as orders. The orders of architecture developed by the Greeks are known as the Doric, the Ionic, and the Corinthian. Later, the Romans developed the Composite and the Tuscan orders.

Since the Greek climate was well suited to open-air construction, the Greeks used the post-and-lintel technique to great advantage. The Parthenon is a classic example of Greek use of the post-and-lintel.

Oriental architects also made effective use of the post-and-lintel. They were able to construct buildings with larger openings under the lintel because they used lighter materials, such as wood. The use of lighter materials resulted in the development of a style of architecture that was very light and graceful. The Oriental post-and-lintel designs were also used extensively for gates and entrances.

The Arch. The Romans began a new trend in the design of wall openings when they developed the arch. The arch is different from the post- and-lintel because it can span (extend over) greater areas without support. It is easier to erect because it is made from many smaller, lighter pieces of stone. The principle of the arch is that each stone is supported by leaning on the keystone in the center. The keystone is shaped like a wedge and locks the other stones in place.

The Vault. The simple arch led to the development of the vault. The vault is simply a series of arches that forms a continuous covering. This development allowed the use of the arch as a passageway rather than as just an opening in a wall. The cross vault is the intersection of two barrel vaults. The barrel vault and the cross vault were popular Roman construction devices.

The Dome. The dome, is a further refinement of the arch. The dome is made of arches so arranged that the bases make a circle and the tops meet in the middle of the ceiling. The Romans felt that the dome gave a feeling of power. Therefore, they used domes often in religious and governmental structures.

The Gothic Arch. Gothic architecture originated in France. It spread throughout western Europe between 1160 and 1530. Another variation of the arch, the pointed arch, was developed in Gothic architecture. The pointed arch (Gothic arch) became very popular in Gothic cathedrals because it created a sense of reaching and aspiring by its emphasis on vertical lines. Construction of the pointed arch posed the same problem

as did conventional arches, that of spreading at the bottom.

To support the arch at the bottom, a new device known as a buttress was developed. Buttresses were gradually moved up the walls and resulted in the development of the flying buttress.

Text 5. New Construction Methods

The development of new materials is usually not possible without the development of new construction methods. For example, large glass panels could not have been used in the eighteenth century even if they had been available, because no large-span lintel-support system had been developed. Only when both new materials and new methods exist is the architect free to design with complete flexibility.

Present-day structures are usually a combination of old and new. In a modern building, examples of the old post-and-lintel method may be used together with skeleton-frame, curtain-wall, or cantilevered construction.

Skeleton Frame. One of the first methods developed to employ modern materials makes use of the skeleton frame. This kind of construction has an open frame to which a wall covering is attached. The frame provides the primary support, and the covering provides the needed shelter. The skeleton frame became popular with the development of framing materials and wall coverings that are light, strong, and usable in a variety of ways. The skeleton frame is now commonly used in family dwellings, and in commercial buildings. When steel is used for the skeleton, the skeleton frame is known as steel-cage construction.

The use of the skeleton frame, as opposed to bearing-wall construction, has given architects new opportunities. They can now design a structure without direct vertical-line outside base support. In this new type of construction, called cantilever, the loads are supported at only one end. Steel is well suited to cantilever construction because loaded steel beams, supported at only one end, can be extended farther without sagging than can any other material.

Since loads in steel-cage construction are not supported by the outside wall, curtain walls are possible. In this type of building, known as curtain-wall construction, a steel cage is erected, forming the shape of the building. The curtain wall, or skin, is added last. This curtain has no structural relationship to the stability of the building; it acts only as a

protection from the weather. Therefore, the curtain wall can be made of materials with little or no structural value, such as glass, sheet metal, or plastic.

Shapes. For centuries, architectural development has been restricted by the use and overuse of the square and the cube (right angles) as the basis for most structures. Architects are now using other shapes such as the, octagon, pyramid, pentagon, circle, and sphere. This has come about with the development of materials that are stronger, lighter, and have a variety of uses. New construction methods also enable architects to design buildings that are completely functional (able to fulfill all needs) without reference to any basic geometric form. Many forms are now possible, and even the basic shapes of floor plans can be drawn to meet a variety of needs.

Sizes. New technology uses knowledge gained from advances in science. One of the most striking results has been the use of new materials and new methods to design and build structures of size greater than ever before. The Sears Tower in Chicago is now the tallest building in the world. But as technology develops even more, buildings can increase to sizes previously thought impossible. Frank Lloyd Wright once proposed a mile- high skyscraper. Ten such structures would house the working office staff of all New York City. Six would suffice for Chicago. The proposed skyscraper would tower far above the largest structures of today.

Who can say what will be possible? The idea of building a geodesic dome over central Manhattan, in New York City, certainly seems impossible at the moment. But remember that landing humans on the moon, and flights to and landings on distant planets, also seemed impossible not many years ago.

Location. Today, architects not only design buildings of enormous size but can also choose locations for buildings that were unthought of years ago. Further advances in transportation and architectural engineering will make even more difficult locations not only possible but workable.

Text 6. Portland Cement

Portland cement is made by heating an intimate mixture of chalk and clay to a white heat (temperature of incipient fusion) and, after the resultant clinker has cooled, grinding it to extremely fine powder.

Portland cement is usually made by the wet process. The chalk and clay mixed with water are reduced to a creamy consistency in washmills, circular tanks in which a central vertical spindle carries a rotating steel framework to which are suspended heavy harrows with projecting teeth. The circumference is fitted with gratings, and the process continues until the creamy liquid called slurry is able to pass the screen. It passes then to a second and third washmill, fitted with screens of ever smaller mesh, until after passing the last washmill only 5 per cent is retained on a sieve of 32,400 meshes to the square inch. During this time the chemists are making periodic tests to ensure the correct proportion of lime to chalk and adjusting when necessary. These proportions are vital.

The slurry is then passed to much larger tanks known as mixers, where it is kept stirred by rotating arms with vertical paddles until the kilns are ready to receive it.

The calcining or burning is generally done in rotary kilns. They are lined with firebrick and set at an angle of about 8 degrees to the horizontal.

The slurry is introduced at the top end by a rotating spoon feed, and gradually works its way down the kiln owing to the combined action of the slope and rotation. In so doing it meets the hot flames (the fuel, generally powdered coal, is introduced into the lower end) which pass up through the kiln and then to the chimney. In this way the slurry gets hotter as it descends and reaches the zone of maximum temperature (about 2,800 °F) some distance from the lower end, when chemical combination of the constituents takes place; all the water having, of course, long since been driven off.

At this stage the cement has formed itself into extremely hard nodules about the size of walnuts known as clinker, which now drops into a lower but parallel rotating and inclined tube where it is cooled from a white heat by meeting a current of air. This air is thus heated to about 600 °F and used for blowing with the powdered coal into the kiln, so economising in fuel.

The next process is the grinding of the clinker in tube mills (horizontally rotating cylinders) divided into three or four compartments. Each compartment contains exceptionally hard steel balls, which, when the mill rotates and clinker is introduced, are lifted and fall on to the clinker and so crush it. The cement passes from one compartment to another, and grinding continues. During grinding about 2 per cent to 3 per

cent of gypsum is ground in to make the cement slow setting. The cement then goes to large circular silos, or into sheds where it is stored. The cement then has to be tested.

Vocabulary notes:

an intimate mixture of chalk and clay	однорідна суміш крейди й глини
temperature of incipient fusion	температура початкового плавлення
the resultant clinker	одержаний в результаті клінкер
grind to extremely fine powder	перемелювати на мінімально тонкий порошок
are reduced to a creamy consistency	доводяться до кремо-подібної консистенції
heavy harrows with projecting teeth	важкі борони із зубцями, що виступають
adjust when necessary	регулювати, коли необхідно
stir by rotating arms with vertical paddles	перемішувати обертовими важелями з вертикальними лопатками
line with firebrick	обкладати вогнетривкою цеглою
a rotating spoon feed	лопать, що обертається й падає
has formed itself into extremely hard nodules	перетворився на виключно важкий конгломерат
to make the cement slow setting	щоб уповільнити його тужавлення

Text 7. Tests of Portland Cement

Test for soundness (i. e. assurance that the cement will not expand after setting is complete). The cement is made into & plastic mass with a specified water content, put into a small brass cylinder cut through on one side and provided with long wires or needles either side of the cut and boiled for 3 hours after being kept in water at 61 °F for 24 hours. The movement at the end of the needles shall not exceed 10 mm.

Test for setting time. The cement is gauged into a paste with a specified amount of water, put into a shallow circular mould and struck off level, and a needle 1 mm. square weighted to about half a pound is applied repeatedly. When this fails to penetrate completely, the time since gauged is known as the initial set. A needle with an annular

attachment is then substituted for the plain needle, so arranged that the needle projects half a millimetre below the annular attachment. When the needle makes an indentation but the annular attachment does not, the time since gauging is known as the final set. The initial set should belong enough to enable mixing, transporting, placing and tamping of the concrete to be completed before setting begins. It should not be less than half an hour for slow-setting cement. (Rapid-setting cements can be supplied for special purposes, but these should not be used for reinforced concrete.) The final set should be not more than 10 hours.

Test for tensile strength. The cement is gauged with a standard sand in the proportion of 1 cement to 3 sand, and with 'a carefully specified quantity of water.

This paste is moulded into moulds of special shape to form a test specimen which is readily held in the jaws of a small testing machine. The central cross-section where fracture occurs is 1 in. square.

The specimens are kept in air (temperature about 61 °F and relative humidity at least 90 per cent) for 24 hours, then removed from the moulds and kept in water (temperature about 61 °F) till tested by breaking. The specimens are held in jaws of specified shape and tension applied at the rate of 100 lb./sq. in. in 12 seconds.

Test for compressive strength. Cubes are compacted by vibration in a special machine for 2 minutes, then kept in air at about 61 °F and 90 per cent relative humidity for 24 hours, and then in water at about 61 °F till tested. They are tested on their sides in a machine applying load at the rate of 5,000 lb./sq. in. per minute. No packing is used.

Some people hold that if the cement passes all the mechanical and soundness tests it is to comply with the chemical requirements, for which the tests are more difficult, especially in the field. The principal object of this test is to guard against an excess or inadequacy of lime in relation to silica, alumina and oxide of iron.

Vocabulary notes:

test for soundness	випробування на доброякісність
is made into a plastic mass	його перетворюють на пластичну масу
test for setting time	випробування на час тужавлення
the cement is gauged into a paste	цемент перетворюється на тісто

weighted to about half a pound	навантажена до 1/2 фунта ваги
fails to penetrate completely	не зможе проникнути повніше
the Initial set	початкове тужавлення
slow- (rapid-) setting cement	цемент, що повільно (швидко) тужавіє
test for tensile strength	випробування на опір розтягу
a test specimen	зразок для випробування, дослідний зразок
the central cross-section	центральний попереч ний переріз
relative humidity	відносна вологість
pass ... soundness tests	пройти випробування на доброякісність
guard against an excess or inadequacy	захист від надлишку чи непридатності

Text 8. Properties And Manufacture of Concrete

A concrete structure, either plain or reinforced, maintains a unique position among the various systems of modern construction. With few exceptions it is the only type of structure that is completely manufactured from its component raw materials on the site of the work. In most instances, the quality of its essential raw materials is decidedly variable. Structures built of steel, stone masonry, or various other materials are composed of elementary units which are partially or entirely prefabricated in factories or shops. These other materials are fitted or assembled on the work by skilled mechanics, but concrete is usually manufactured at the site of the structure by unskilled laborers. The designer of reinforced- concrete structures should remember this. He must know the useful properties and practical limitations of the materials with which his plan will be constructed. With this knowledge he should plan the work in such a manner that desirable results are easily and correctly attained in the field.

Definition and Description of Concrete. Concrete is an artificial stone, cast in place in a plastic condition. Its essential. ingredients are cement and water which react with each other chemically to form another material possessing structural strength. A mixture of cement and water is termed cement paste. In order to increase the volume of artificial stone produced from a definite amount of cement it is customary to add

inert filler materials known as aggregates. A large amount of cement paste to which has been added a small amount of fine aggregate, to produce a mixture of fluid consistency, is called grout. When the amount of fine aggregate is increased to the extent that the mixture loses its fluidity and behaves as a cohesive plastic, the resulting mixture is termed mortar. With the further addition of coarse aggregate, the mixture is called concrete.

It is a custom of long standing to designate these mixtures in terms of the relative volumes of cement, fine aggregate, and coarse aggregate of which they are composed; The ingredients are always indicated in the same order: cement first, fine aggregate next, and coarse aggregate last. For example, a 1:2:4 concrete is a mixture of 1 cu. ft. of cement, 2 cu. ft. of fine aggregate., and 4 cu. ft. of coarse aggregate plus a non-specified amount of water sufficient to produce a plastic consistency. A proportion given as 1:3 is intended to mean a mixture of cement and fine aggregate plus an indefinite amount of water but without the addition of coarse aggregate. Such a mixture would be classified as mortar.

This system of specifying concrete proportions by volume is rapidly becoming obsolete on major works but is still used for small projects. The current practice of progressive engineers is to indicate the proportions of materials in the same order but by weight and, frequently, to indicate the amount of water to be used.

Water, cement, and aggregates when mixed together in properly predetermined proportions produce concrete that is a plastic ma s capable of being poured or cast into molds. These molds, which are actually called forms, must be built of such size and shape as to restrain the plastic mass until it solidifies. With few exceptions the forms must be constructed in such a manner that the concrete, when poured, will be in its final position in the structure. Besides restraining the plastic mass until solidification occurs, the forms serve a less obvious purpose which should not be overlooked. They support the solidified mass until it has attained sufficient strength to support itself without undue deflection or complete collapse.

Concrete does not solidify or attain appreciable strength instantaneously. The chemical reaction of cement and water is slow and requires time for its completion. The reaction continues for many years. It is frequently divided, for purposes of description, into, three distinct phases. The first, called the initial setting time, requires approximately

45 min. to 8 hr. for completion. During this time, the freshly mixed concrete gradually decreases in plasticity and develops pronounced resistance to flow Disturbance of the mass, or remixing during this time, may cause serious damage. The second phase is an interval during which the concrete may be considered as a soft solid without surface hardness. It will support light loads without indentation, but it is easily abraded. Its surface can be scored, roughened, or otherwise marred without appreciable effort. This phase is frequently termed the interval of final set. Its duration is very indefinite but may be considered to exist for approximately 5 to 20 hr. after the original mixing operation. The third phase is one of progressive hardening and increase in strength. For concrete of good quality this progressive improvement continues indefinitely. It is rapid during early ages until about one month after mixing, at which time the mass has attained the major portion of its potential hardness and strength. After one month the improvement continues at a greatly reduced rate.

Vocabulary notes:

maintains a unique position	посідає унікальне місце
which are partially or entirely prefabricated	які частково або повністю попередньо виготовлені
reinforced-concrete structures	залізобетонні конструкції
structural strength	будівельна міцність
it is a custom of long standing	давно вже стало традицією
are always indicated in the same order	завжди наводяться в тому самому порядку
a non-specified amount of water	невизначена кількість води
when mixed together in properly predetermined proportions	коли вони змішуються в заздалегідь визначених пропорціях
is ... capable of being poured or cast into molds	здатна до розливки чи бетонування в формах
a less obvious purpose which should not be overlooked	другорядна ціль, яку проте не можна ігнорувати
the initial setting time	початкове тужавлення бетону
pronounced resistance to flow	виражений опір деформації
without indentation	без порушення цілісності, без западин

is easily abraded	легко шліфується
final set	остаточне тужавлення
progressive hardening and increase in strength	поступове твердіння й нарощування міцності
is rapid during early ages	це відбувається швидко на початкових стадіях

Text 9. Bricks and Brickwork

The traditional brick of the building trade consists of blocks of clayey earth which have been baked or burnt. Other more modern types include concrete and sand-lime bricks. The quality and properties of a clay brick depend on three factors, namely: a) the chemical and mineralogical composition of the earth used; b) the processes through which it passes prior to burning or baking; c) the temperature of burning and the care with which the burning is carried out.

Material suitable for the making of clay bricks consists essentially of clay and sand, i. e. of silica and alumina. Other constituents include oxides of iron, iron pyrites, chalk or limestone, salt, and small proportions of various minerals which yield manganese, sodium,, potassium and traces of other metals, together with a certain amount of organic matter.

The colour of a brick is largely governed by the chemical composition of the brick earth, but the temperature of burning is also important. Shades of orange and red are found in bricks made from clay containing oxides of iron, the exact shade depending on the amount of the iron and the temperature of burning while blue bricks are made from clay with a high iron content and a very high temperature of, burning. Clays which are free from iron yield white bricks; yellow bricks are obtained by the addition of magnesia to an iron-free clay, but in clamp burnt bricks a yellow colour may be due to sulphur released from the breeze during burning. The colour of facing bricks is often varied by sprinkling selected sand, sometimes with specially added pigments such as manganese dioxide, either on the raw brick or in the brick mould prior to firing. The surface of the brick then takes on the required colour during burning.

The actual making of a brick consists of two main processes, namely: 1) the preparation of the unburnt brick and 2) the burning or baking of the brick. The preparation of the brick may further be considered in three

distinct stages, i. e. 1) the preparation of the earth, 2) the shaping of the brick, and 3) the drying of the brick prior to burning.

Preparation of the brick earth. Brick earths are quarried or dug from open pits. Stone-picking, i. e. the removal of large stones, is carried out by hand and then the clay is spread out to expose it to the action of the weather. The weathering is facilitated by placing alternate layers of materials such as sand, chalk or breeze with the brick earth, piled in banks up to a height of some 6 feet. Tempering follows weathering and in big brickfields it is carried out by means of pug-mills

If the clay as dug is not suitable for brickmaking purposes, but requires conversion to malm, it is placed in a wash- mill, immediately it is dug. This machine resembles a pug-mill, but the cylinder is made of brick instead of iron. The other materials to be added, such as sand and chalk, are ground in water and added to the clay in the wash-mill. The mixture is reduced to a liquid of a creamy consistency, known as *slurry*, and then passed through iron gratings to retain any large particles, and then into settling pits, or *backs*. The water is allowed to evaporate until the clay is almost solid.

The shaping of the brick may be done by hand or by machine. The hand-made brick is shaped by means of a wooden mould. Thus this mould is larger than the finished burnt brick, to allow for shrinkage.

In moulding the brick, the inside of the wooden mould is sprinkled with either water (slop-moulded) or sand (sand- moulded) to prevent the clay from sticking to the wood. In the best-quality bricks, the sand is carefully chosen so as to give the required colour and finish to the burnt brick.

The moulder throws a clot of clay into the prepared mould, with sufficient force to fill the mould, and removes excess clay from the top with a wooden *strike,* leaving a level top surface.

Slop-moulded bricks are wetter than sand-moulded ones, and they are left in the mould on covered drying-floors or drying-rooms for some 48 hours before being taken to the *hacks* for the final airdrying. Sand-moulded bricks are taken directly to the hacks, which are simply long rows of bricks so placed that they are dried by winds, but are protected from rain by pent roofs.

The machine-made bricks may be moulded, pressed or wire-cut. Moulded machine-made bricks go through the same processes as the hand-made bricks, i. e. weathering, grinding and pugging, but the pugged

material is mixed with enough water to make it of a workable consistency and this mix is run by machinery into moulds. The moulded brick is dried and fired in the normal way.

A pressed brick made by the stiff plastic, process needs little or no drying when it comes from the press. A suitable clay is ground when dry, and then passes from mixer, into a rough shaper and finally to a die box. Here the brick is pressed, sometimes twice, then fired.

The semi-dry process for pressed bricks consists in running the ground, screened clay mechanically into a container which passes under the press head.

A wire-cut brick is made by extruding the clay from a machine through a shaped die. This gives a continuous block of clay which is cut by wire into brick lengths. This may be done by hand or in more modern types of machinery the cutting may be automatic. Some wire-cut bricks are partially dried and then pressed.

The drying of bricks often takes place naturally in the hacks. Artificial drying is, however, used where waste heat is available from the kilns. Hot air flues or steam pipes are led from closed kilns to the shed in which the bricks are stacked, and this gives quicker drying, in from 8 to 10 days, than if wind drying alone is utilised. In general it is not possible to hasten the process of drying without damaging the quality of the brick, since too rapid drying produces flaws and cracks.

The burning of the bricks may be carried out in either a clamp or a kiln, the latter being either of the intermittent, the continuous or the tunnel type.

Text 10. Prestressed Concrete

Degree of Prestressing. Prestresses in the concrete are designed and induced to counteract the stresses caused by external loads. The designer should aim at a high initial pretension of the steel . A low initial steel stress produces a low and rather uncertain concrete compression, combined with ah uneconomical use of steel. The elastic elongations are relatively small and require fine adjustments in the stretching devices. In contrast, a high initial steel stress produces high and reliable concrete compression, obtained with a small amount of steel. The steel elongations are comparatively large, and therefore easier to adjust and maintain. High initial steel stresses are therefore more effective and more economical than low initial steel stresses.

The upper limits of the initial tension should be governed by the creep of the steel and by the crack coefficient.

Cooperation of Steel and Concrete. The working together of the two materials may be secured by bond, or by end anchorages on the prestressing members, or by a combination of both. For steel up to 0.5 in. diameter, the effect of bond is usually sufficient to ensure the transfer and the maintenance of the preliminary stresses. For heavier bars, anchorage blocks are required in addition to the bond effect. In bondless structures all prestresses must be induced by anchorage blocks, no matter what diameter the steel.

The strength properties of steel and concrete should be interrelated. The higher the strength of the available steel, the better should be the strength properties of the concrete in bonded structures. Where new types of bonded structures or structural units are to be mass produced, the successful cooperation of steel and concrete by bond should be proved by fatigue tests on prototypes.

Jointing of Pretensioned Steel. Prestressed members should be continuous over their full lengths and joints should be avoided. Connections by overlapping or turnbuckles should not be allowed. Welded connections may only be used when it has been established by preliminary tests that the steel is weldable. The test samples to be welded should be of the same thickness as the steel used in the structure, without any special preparation, and the quality of the welded joint should be tested in the usual manner.

Cables. Where a whole cable is tensioned in one process, all wires of the cable should have the same initial stress. To ensure this, it is adequate to ensure that the wires are as nearly as possible of the same initial straightness. A practical method is to group and maintain the wires in a prearranged disposition, so that no wire can diverge from the axis of the cable by an amount sufficient to cause an appreciable variation in length. The spacing of the wires should be adequate to permit of grout penetrating through the whole length of the cable. Where sheathed cables are placed in the forms and concrete is cast around them, the sheathing must be completely water-tight.

Non-prestressed Reinforcement. Both prestressed steel as well as non-prestressed reinforcements may be used in the same structure. In fully prestressed structures with eccentric precompression, non-prestressed reinforcements are employed to balance the tensile stresses

created in the concrete by the prestressing process before the live loads are applied. They are also placed eccentrically, but at the side opposite to the pretensioned steel. The cross-sectional area of the steel should be designed to cover the full tension in the concrete with a stress not exceeding the values permissible in ordinary construction.

In partially prestressed structures a substantial part of the eccentric main reinforcement is not prestressed. The permissible stress in the non-prestressed main steel may be substantially increased by the use of supplementary prestressed wire reinforcements. In this case both the prestressed wires and the non-prestressed bars are placed in the same zone of the structure, and the strengths of the two items are added to each other to form the tensile component of the inner moment.

Concrete Cover and Distances between Prestressing Members.

The cover of concrete measured from the outside of all prestressing members, including transverse ties, spirals, stirrups, and all secondary reinforcement, should at all points be at least 0.5 in. or the diameter of the bar, whichever is the greater. In structures exposed to the weather, the cover should be at least 0.75 in. These relatively low values are justified by .the accurate positioning of the stretched main steel, which in turn determines the position of the secondary reinforcements.

In girders of large spans, bridges over steam-operated railways, hydraulic structures, and structures exposed to acids, oils, fumes, or other harmful substances, the clear cover should be at least 1.5 in., and protective coating should be applied to the concrete.

The minimum lateral distance between bonded prestressing members is mainly dependent on the maximum size of the coarse aggregate used in the concrete, and should be, 0.25 in. greater than this maximum size. Both the lateral and vertical distances between compressor wires or anchored steel bars should be at least 0.75 in. These minimum dimensions are based on the assumption that the concrete is filled and compacted by vibration.

Precautions against Rusting, Adequate cover against rusting must be provided on all stressing members and anchorages.

Concrete units with bonded compressor wires mass-produced on long stretching beds have their main steel showing at both end faces without any cover. Such units have been used for many years exposed to the weather and no penetration by rust has yet been ascertained. Nevertheless, it is recommended that the end faces with the cut steel

wires be covered by a layer of gunite 0.5 in. thick.

Fire Precautions. Up to the present, little experience has been gained on the fire safety of prestressed concrete structures. A few British and German test reports indicate that a precompressed, dense concrete offers good protection to the steel. But there is no indication yet how the ultimate strength of the hard-drawn wire is affected, if the protection offered by the concrete should be overcome. Consequently, prestressed structures and units should only be regarded as fire-proof when prototypes have been subjected to, and passed, the specified fire tests. The prototypes must be true copies of the units to be tested, in the sense that they should be made of identical materials, prestressed to the same degree, and have the same shape and dimensions.

Text 11. New Materials

Advancements in architecture throughout history have depended on the building materials at hand. As recently as American colonial times, builders had only wood, stone, and ceramic materials with which to work. Early American architecture reflects the use of these materials. But a great change came with the development of steel, aluminum, structural glass, prestressed concrete, wood laminates and plastics. Now, buildings can be designed in sizes and shapes never before possible.

Many new materials are really old materials used in new ways or in new forms. Sometimes, they are old materials manufactured in a different way. For example, glass is not a new material. But the development of structural glass, glass blocks, corrugated glass, thermal glass, and plate glass in larger sizes has given the architect much greater freedom in the use of this material.

Wood is also one of the oldest materials used in construction. Yet, the development of new structural wood forms, plywoods, and laminates has revolutionized the use of wood in building. The manufacture of stressed-skin panels, boxed beams, curved panels, folded roof plates, and laminated beams has given builders new ways to use wood.

Among the truly new architectural materials is plastic. The development of vinyl and laminated plastic has provided the architect with a wide range of new materials.

But the material that has contributed most to architectural change is steel. Without the use of steel, construction of most of our large high-rise buildings would be impossible. Even smaller structures can now be built

on locations and in shapes that were impossible without the structural stability of steel.

The manufacture of aluminum into lightweight, durable sheets and structural shapes has also given greater variety to design. But an old material, concrete, actually changed the basic nature of structural design. New uses of concrete are found in factory-made reinforced and prestressed structural shapes. These shapes are used for floors, roofs, and walls. They have provided the architect with still other tools for structural design.

Today's architects have the opportunity to design the framework of a building of steel, but use a variety of other materials as well. They can use large glass sheets for walls, prestressed concrete for floors, aluminum for casements, plastics for skylights, and wood for cabinets. A wide variety of still other material makes possible different combinations.

Text 12. Plan of the Modern British Town

It is easy to distinguish from one another the market-town, the country town, the industrial town because the main work carried on in each of them is so different. But in any town all these tasks are being carried on, each by at least a few people. Every town has some banks and some offices, some workshops and some police stations, some dealers in local produce.

Most British towns have long histories. They have seen many changes in the way people live and the ways they make a living. And all these changes have brought about changes in the streets and buildings of the town itself.

In every town one can find sections where old buildings have been torn down and replaced by new ones. There are also other sections where the old buildings still stand but are used today for quite new purposes.

In many towns there is some old part which has stood for the main roads leading into the town from the country winding streets and its tiny shops.

The town centre has probably changed more than any other part of the town. It was always the meeting-place for the main roads leading into the town from the country round. But these roads have now become the busiest and most important streets, so they have had to be widened and straightened to carry the traffic. The old narrow streets and the shops

which bordered them have all vanished.

In the central area will be found the commercial centre of the town with its banks, insurance offices and business houses, the offices of the local newspaper and the principal theatres and cinemas. As the town grows its centre also swells and pushes out the other quarters of the town.

In most cases the town centre was already established when the first railway was built, so the town station and the tracks leading to it lie just outside the centre. But railways and industries in most towns developed about the same time and each helped in the growth of the other.

Where the town has continued to grow in recent years and has extended its old industry, or developed a new one, the more modern factories will be found still further from the town centre. They are very different from those of the older and more central industrial area.

The new residential districts are between the main roads and away from the factories. Each has its own shopping centre and often its own cinema and playing fields as well. The coming of the motor-bus and the motorcar has made it possible for the residential part of the town to spread far out into the country into suburbs.

The general use of electricity has enabled the industries to move out too.

Text 13. The Practice of Town Planning

Before attempting to describe the processes of modern Planning in practice it is necessary to inquire with some precision what are its main objects and in what direction it is leading.

The main objects of modern Planning are: Beauty, Health and Convenience. There can be little doubt that beauty should stand first as it is the quality which must run through the whole in order to lift sanitation and engineering to the level of civic design and the dignity of city life. It is of course quite understandable that for strategic reasons the word beauty was hidden under the forbidding chill of «amenity» and placed second in order. If town planning is to be complete and to avoid lopsidedness a just equipoise must be attained between these three.

Nor will beauty without health do. In many of the old towns and villages which we most heartily admire picturesque beauty is to be found, but at the expense of health. There is a gloomy grandeur about the grime of Manchester or the pall of smoke over lower Sheffield, which is

comparable to the eruption of a volcano or the burst of a thunderclap, and is thoroughly typical of the strength of these cities. But though smoke may produce wonderful sunsets, we can safely say that beauty which is the cause of a higher death-rate is wrong and must be blown away by the planner at the cost of artistic obloquy or commercial grumbling.

Some of the nineteenth-century Continental Town planning was too much concerned with boulevards and public places and too little with the living conditions behind the fine facades. Conditions as to air space and light were below the English level; and yet the dreariness of our externals has produced more drab urban conditions, and even tended to affect the interior of the houses. One of the chief advantages of the lower density in modern suburban planning has been the possibility of introducing beauty, which here stands for the preservation of trees and greenery, an improved type of domestic architecture, the avoiding of monotony and the planning of the whole site to group houses together, so that besides being individually pleasing they may make attractive compositions. This aspect of beauty is so modest and so comparatively easy to be got that it should not terrify the most hardened philistine.

Beauty and health stand condemned if they prevent commercial Convenience; and it will be realized that convenience is the most clearly demonstrable of town planning advantages.

Town planning, in a word, intends to make the city in every way a more convenient place to work in, aiming at designing and remodelling its business quarters, manufacturing districts, railway facilities and water front.

Supplement II
СИТУАТИВНІ МАТЕРІАЛИ ІЗ АКАДЕМІЧНОГО ТА ПРОФЕСІЙНОГО СЕРЕДОВИЩА СТУДЕНТІВ

1. My Native Town

1. Study the following words and phrases:

to be located	розташовуватись
a tributary	притока
to mention	згадувати
manuscript	рукопис
anniversary	річниця
to destroy	руйнувати
amber	бурштин
building and facing stone	будівельний та лицювальний камінь
chalk	крейда
peat	торф
fieldspar	польовий шпат
tuf	туф
ancient	стародавній
former	колишній
to house	розміщувати
to be associated with	пов'язаний з
unfading pages	невмирущі сторінки
victim	жертва
to tower	височіти
to be immortalized	бути увічненим
to bear	носити
headquarter	загін
to wage	вести
regiment	полк
to unveil	урочисто відкривати
suburbs	передмістя
rebellion army	повстанська армія
plaque	меморіальна дощечка
bonded fabric	неткані матеріали
factory for high voltage equipment	завод високовольтного обладнання

mineral fertilizers works	завод з виробництва міндобрив
spare parts for tractors works	завод тракторних запчастин
high precision instruments	інструменти високої точності
furniture	меблі
foodstuff	продукти харчування
consumer goods	товари широкого вжитку
varied	різноманітний
puppet-show	ляльковий театр
movie-theatre	кінотеатр
fine arts school	художня школа
wide network of children's day care centres	широка мережа дошкільних установ
health facilities	лікувальні заклади
drug store	аптека
swimming pool	плавальний басейн
steadily	постійно
rapidly	швидко
expand	розширяти
to welcome	радо приймати

2. Listen to the text. Try to understand what it is about. Read the text and then answer the questions after it. Say what new information you have learnt and what you are familiar with.

RIVNE.

Rivne Region is situated in the north-west of Ukraine. The area is 20.1 thousand sq.km. **624 deposits of minerals**, in particular basalt, amber, building and facing stone, chalk, kaolin, feldspar, peat, tuf and sands can be found in Rivne Region. Sources of mineral water can be found in Ostroh, Spepan', Korets and Zhobryn (Chervona Kalyna).

Rivne is the administrative, economic, educational and cultural centre of the region. It is located in the Western Ukraine on the banks of the Ustye river, a tributary to the Goryn river. The population of Rivne is about 300 thousand residents.

Rivne was first mentioned in manuscripts dating back **to 1283**. During the centuries Rivne was often destroyed by invaders and burned; that's why there are only a few ancient architectural monuments there. Among them of attention is **a building of a former gymnasium**, where from 1866 to 1874, an outstanding **writer, V.G.Korolenko** studied.

Today the building houses the regional museum. The heroic past of our city is described in numerous books. It was here, in Rivne region, in the village of Pliasheva, near Berestechko, that the Cossack regiments, led by B.Khmelnitsky, M.Kryvonis, t.Bogun and D.Nechaj battled the enemy during the liberation war of 1648-54, being waged by the Ukrainian people against Polish domination. **A magnificent monument to the heroes of Berestechko was unveiled on June 16, 1991**.

Rivne is associated with the names of many prominent people – writers, scholars, statesmen, military leaders, who lived or stayed here in different times. **Leonid Kravchuk, the first president of independent Ukraine** (1991-1994), was born in the village of Velyky Zhytyn, not far from Rivne.

In 1846 Rivne was visited **by T.Shevchenko**, who was touring the land as a member of Kyiv Archeographic Committee. The town was visited by the great Ukrainian poetess **Lesya Ukrainka**. In above mentioned Rivne gymnasium, where **Korolenko** studied, history was taught by **M.Kostomarov**, Ukrainian historian, ethnographer and writer. **A.Kuprin, V.Dokuchayev** – these and many other prominent people are connected with Rivne. Rivne Region gave us **the Peresopnytsia Gospal, the Ostroh Bible, Grammar by Melentij Smotrytskyi and Ostroh edition of "ABC book" by Ivan Fedorov.**

The city has a lot of historical places and monuments, associated with the period of the Civil War and Great Patriotic War of 1941-45. In the city park there is the grave **of the Hero of the Civil War Oleko Dundich**. **The monument to the victims of fascism** towers over Byla street. Rivne wrote unfading pages into the history of partisan movement in Ukraine. The feat of our soldiers is immortalized in the **Monument on the Victory Square**. N. Prikhodko, P.Mirjushchenko Streets are named in the honor of war heroes.

Nowadays the streets of the city bear the names of outstanding and prominent people, such as prince K.Ostrozky, who founded Ostroh Academy; famous Ukrainian historians **M.Hrushevsky, M.Dragomanov, M.Kostomarov**; world known Ukrainian and foreign writers and poets: **T.Shevchenko, I.Franko, L.Ukrainka, M.Kotsyubynsky, A.Pushkin, W.Shakespeare**; world famous composers **M.Lysenko** and **P.Tchaikovsky**, **opera singer S.Krushelnytska**, Ukrainian artists **Nill Khasevich**; the heroes of the national liberation movement and Ukrainian rebellion army

R.Shukhevich, C.Savur, S.Bandera and others.

Today Rivne is a developing industrial centre, whose output is known not only in Ukraine, but in many countries abroad. **The industry of the region** is represented by electricity production, mineral fertilizers, bonded fabric, woodwork, building materials, glass-ware, high-voltage equipment, high-precision instruments, furniture, consumer goods and broad assortment of foodstuff.

The city has general educational schools, lyceums, gymnasiums, technical schools, music and fine arts schools, a wide network of children's day care centers. Today **National University of Water Management and Nature Resources Use, National University of Ostroh Academy** and **Rivne State Humanitarian University** annually admit thousands of young people eager to acquire knowledge. They are training skilled specialists for national economy, education and culture. Besides there appeared some **private** and **commercial** higher educational establishments in Rivne.

Rich and varied is the **cultural life of our city**. The residents of Rivne have the **Regional Music and Drama Theatre**, named after M.Ostrovsky, **Puppet-show**, **the philharmonic society**, movie-theatres, many libraries and numerous museums.

The city possesses **a well developed network of health facilities**: **twelve hospitals**, **nine policlinics**, the **Regional Diagnostic and Treatment Centre**.

Thousands of local residents go in for **physical culture and sports**. There is the Avangard stadium, housing twenty five thousand, the motor-cycle track, sport grounds and swimming pools.

The city is steadily and rapidly expanding its borders. New residential districts, where hundreds of families have moved into their new apartments, have grown up in the suburbs. At their disposal are stores, drug stores, cafes and other service establishments. Rivnenshchyna is actively developing **tourism** in all of its varieties, including green and cultural tourism.

Rivne is called **a city of spring and flowers**. The people have created the picturesque parks and fountains. The hospitable city welcomes its guests.

3. Having read the text try to formulate answers to the following questions:

1. What deposits of minerals can be found in Rivne Region? 2. Where is Rivne located? 3. Rivne is the administrative, economic and cultural centre of the region, isn't it? 4. What is the population of Rivne? 5. When is the first written mention of the city dated? 6. Are there any ancient architectural monuments in Rivne? 7. What outstranding writer studied in Rivne gymnasium? 8. What are historical places and monuments of the city associated with? 9. What was Rivne during the Great Patriotic War? 10. What monuments can one find in Rivne? 11. Whose names do the streets of the city bear now? 12. Rivne is a developing industrial centre, isn't it? 13. What industrial enterprises are there in Rivne? 14. What do they produce? 15. Are there any threatres in Rivne? 16. What universities are there in our city? 17. Whom do they train? 18. Does the city possess a well developed network of health facilities? 19. What recreational and sport facilities are available for residents of our city? 20. What places of interest can you show to a person who would like to go sightseeing in your city?

4. Work in groups of three or four. Try to collect as much information as possible about your native town. Get ready to present this information to your class and to answer questions about it.

5. Discuss the basic situations: a) you show your city to English-speaking visitors; b) you take them on a sightseeing route; c) you answer the guest's questions.

2. Ukraine

1. Read and memorize the following words and word-combinations:

chronicle	літопис
ancient Slavs	стародавні слов'яни
to cover the territory	займати територію
according to its size	за своїми розмірами
to border	межувати
to be washed	омиватися
armed forces	збройні сили
coal	кам'яне вугілля
different ores	різні руди

basis of industrial development	основа промислового розвитку
latitude north	північна широта
mild climate	м'який клімат
fertile black soil	родючий чорнозем
watershed	басейн *(річки)*
access	доступ
to criss-cross	перехрещувати
railroad	залізниця
highway	автомагістраль
oil and gas pipelines	нафто- і газопроводи
high voltage transmission line	лінія високовольтної передачі
to ensure	забезпечувати
close economic ties	тісні економічні зв'язки
flat plain	плоска рівнина
lowland	низина, низька місцевість
elevation	підвищення, височина
within the borders	у межах кордонів
folded mountains	складчаті гори
treeless summit	вершина без рослинності
gentle (steep) slope	пологий (стрімкий) схил
artificial diamond	штучний діамант
electric welding	електрозварювання
nuclear physics	ядерна фізика
to vest in	надавати повноваження

2. Read the text and do the tasks that follow:

The term Ukraine first appeared in the chronicles of ancient Slavs in the 12th century as a geographical name of southern lands of the ancient Kyiv Rus'.

Now Ukraine covers the territory of 603,7 thousand square kilometers and has the population of nearly 47 mln. People. Two such countries as Italy could be located in this area. Ukraine's territory is the 42nd in the world according to its size.

In the west Ukraine borders on Poland and Slovakia, in the south-west on Hungary, Rumania and Moldova, in the north on Byelorus', in the north-east on the Russian Federation.

In the south Ukraine is washed by the Black Sea and the Sea of Azov.

Ukraine is a highly-industrialized country whose economic potential

is great.

Ukraine has its own armed forces, and maintains its diplomatic relations with foreign countries.

Ukraine is rich in coal, gas, different ores, gold and other natural resources. The basis of industrial development is metal.

Ukraine is in ideal geographical position for the development of its resources, lying between 44° and 52° latitude north, on the same latitude as the USA, Britain, China and Japan. The climate is mild and warm with a long summer and a short winter. Together with its fertile black soil, this makes it ideal for the development of intensive agriculture. The main part of Ukraine is located in the watershed of the Dnieper River, which divides Ukraine into two parts: Right-Bank and Left-Bank Ukraine.

Ukraine also lies on the Danube, and this gives it access to European countries. Through the Siversky Donets it has access to the Don.

The territory of Ukraine is criss-crossed by railroads and highways, oil and gas pipelines and high-voltage transmission lines – all of which ensure close economic ties with Eastern and Western Europe.

Ukraine consists largely of a flat, fertile plain with no natural boundaries except the Carpathian Mountains in the south-west and the Black Sea in the south. Great areas are occupied by steppes and forest-steppe regions.

Lowlands occupy a considerable part of the country. In the north lies the Polissia Lowland. On the Left Bank, the Dnieper Lowland runs along the Dnieper River. The Volhynia Plateau is 200-300 m in elevation.

Within the borders of Ukraine we find the Carpathian Mountains with the highest peak Hoverla (2061 m) which is located in the Chornohora massif. The Carpathians are young folded mountains, so they have flat summits and gentle slopes. The flat area of the treeless summit is called a polonyna.

The Crimean Mountains stretch in three parallel ranges. Their southern slopes are steep, the northern ones more gentle. The Main Range is the highest rising to 1500 m above sea level. Its highest peak is Roman Kosh (1545 m).

The Ukrainian scientists have discovered a way of manufacturing artificial diamonds and have developed methods of electric welding: they have made outstanding progress in nuclear physics, chemistry and other branches.

Kyiv is the capital of Ukraine, its industrial, scientific, administrative and cultural centre.

Ukraine was proclaimed independent state on August 24th 1991. By the Constitution the government is composed of three coordinate branches: the executive, the legislative and the judicial power.

The executive power is vested in the president who holds office for five years. The legislative power is vested in the Verhovna Rada, Parliament of Ukraine. The Supreme Court of Ukraine constitutes the judicial branch.

Being one of the founders of the United Nations Organization in 1945, Ukraine actively participates in its work aimed at preserving peace and friendship among different states.

3. Answer the following questions:

1. When and where did the term Ukraine first appear?
2. What is the total area of Ukraine?
3. What is the population of Ukraine?
4. Which countries does Ukraine border on?
5. Is Ukraine washed by any sea?
6. What is the basis of industrial development of Ukraine?
7. Ukraine is in ideal geographical position in terms of development of its resources, isn't it?
8. What natural resources is our country rich in?
9. Where is the main part of Ukraine located?
10. What ensures close economic ties of Ukraine with Eastern and Western Europe?
11. What transport infrastructure is the territory of Ukraine criss-crossed by?
12. Are there any natural boundaries in the country except the Carpathians in the south-west and the Black Sea in the south?
13. Lowlands occupy an insignificant part of Ukraine, don't they?
14. What are the highest peaks of the Carpathian and Crimean Mountains?
15. What are the achievements of Ukrainian scientists?
16. When was Ukraine proclaimed independent state?
17. Which coordinate branches does the government consist of?
18. What is the highest body of legislative power in Ukraine?
19. How many people's deputies are there in the Supreme Council?

20. Does Ukraine actively participate in the work of any international organization?

4. Speaking about our country:

Step 1.Decide which of these statements are true and which are false:

1. In the south Ukraine is washed by the Baltic and the White Seas.
2. Ukraine was first mentioned in the chronicles in 1213.
3. Three such countries as France could be located in Ukraine's territory.
4. The basis of industrial development of Ukraine is coal.
5. Ukrainian scientists have created the first electronic computers.
6. Our country is one of the founders of the United Nations Organization in 1949.
7. The president of Ukraine is elected for a term of seven years.
8. There are three branches of power in Ukraine: the executive, the legislative and the judicial ones.
9. Ukraine is a highly developed industrial and agricultural country.
10. The highest body of the legislative power is the Supreme Court.
11. Most of the research institutes of Ukraine are located in Kharkiv.
12. Great areas are occupied by forests, treeless plains and valleys.
13. On the Right Bank, the Dnieper Lowland runs along the Dnieper River.
14. The southern slopes of the Crimean Mountains are gentle.

Step 2. Finish the following sentences:

- The climate of Ukraine is mild and … .
- The main part of Ukraine is located in the … .
- The highest body of the executive power is … .
- Ukraine lies on the same latitude as … .
- Ukrainian scientists have created the first … .
- The southern slopes of the Crimean Mountains are … .
- The territory of Ukraine is criss-crossed by … .
- Great areas are occupied by steppes and … .
- The name Ukraine first appeared in … .
- Ukraine is a highly industrialized country, whose economic … .
- Two such countries as Italy could be … .
- Its fertile black soil makes it ideal for … .

- In the west, Ukraine borders on … .
- The president of Ukraine is elected for a term … .
- There are three branches of power … .
- Our country is one of the founders of the UNO in … .
- Ukraine proclaimed its independence on … .
- In the south, Ukraine is washed by … .
- It is in ideal geographical position for … .
- Our country lies between 44° and … .
- Ukraine has its own armed forces, and maintains … .
- The territorial structure of Ukraine consists of … .

Step 3. Using the material of the text and of the tasks carried out, make up a story related to Ukraine according to the following plan:

1. Перша згадка про назву нашої країни в літописах.
2. Загальна площа, кількість населення, географічне положення.
3. Країни, що межують з Україною
4. Клімат, природні ресурси, корисні копалини.
5. Державна система, державні символи України.
6. Промисловість, сільське господарство.
7. Наука, освіта, культура.
8. Гілки влади, їх головні функції.
9. Територіальна структура, найбільші міста.
10. Членство у міжнародних організаціях.

3. Great Britain

1. Read and memorize the following words and word-combinations:

parliamentary monarchy	парламентська монархія
total area	загальна площа
minority	меншість, менша частина
isle	острів, острівець
to separate	відокремлювати
to surround	оточувати
peninsula	півострів
health resort	літній курорт
coast	узбережжя
humid	вологий
thinly	рідко, негусто
decline	занепад

temperate	помірний
highland	узгір'я, високогірна місцевість
to divide	ділити, розділяти
cradle	колиска
military base	військова база
hereditary	спадковий
signature	підпис
upper house	верхня палата
attractive scenery	привабливий пейзаж
unspoiled natural environment	незаймане природне середовище
maritime climate	морський клімат
to increase	збільшувати, зростати
plague	чума, моровиця
shipbuilding	суднобудування
to recover	відновлювати, відроджуватись
to expand	розширюватися, розвиватися
to prosper	процвітати
to define	визначати
to come into being	виникати, з'являтися
to introduce proposals	вносити пропозиції
to approve	схвалювати, затверджувати
to accept	прийняти *(пропозицію)*

2. Read the text and do the tasks that follow:

The official name of the state is the United Kingdom of Great Britain and Northern Ireland. It is designated as a parliamentary monarchy. The total land area is 244,000 sq. km or 94,500 square miles and the population is 58,200,000. The capital city is London. English is the official language, but there are many minority languages, notably those spoken by the various Asian communities in many British cities; Gaelic is spoken in the Highlands of Scotland, parts of Ireland and the Isle of Man. Welsh is the first official language in Western Wales.

The British Isles, which lie off the north-west coast of Europe, consist principally of the islands of Great Britain and Ireland, the Isle of Man, and the Channel islands. There are also many other small islands at the coast of Great Britain. The four main administrative components of the United Kingdom are England, Wales, Scotland and Northern Ireland. The Isle of Man and the Channel Islands have a certain administrative

autonomy.

Great Britain is bordered by the Atlantic Ocean to the north, north-west and south-west. It is separated from Europe by the North Sea and the English Channel. In the west, Great Britain is separated from Ireland by the Irish Sea.

Lying in temperate latitudes and surrounded by water, the British Isles have a mild, temperate, cool and humid climate, though in the highlands of Scotland it is much more severe. The chief rivers of Great Britain are the Severn, the Thames, the Wye and the Tyne in England, and the Tay, the Clyde and the Tweed in Scotland. The largest cities in Britain are London, Birmingham, Glasgow, Liverpool, Manchester, Sheffield, Bristol, Leeds and Edinburgh.

Of the four countries which make up the United Kingdom of Great Britain and Northern Ireland England is the largest. It occupies an area of 131,8 thousand sq. km and has the population of 46.1 m. people The mainland of England can physically be divided into Northern England, the Midlands, South-East England and South-West England.

Wales is a peninsula with a territory of 20,800 sq. km and a population of about 3 mln. It is a thinly populated region. The capital of Wales is Cardiff.

Scotland occupies an area of 78,8 thousand sq. km and has a population of 5.2 mln. people. Its territory can be divided into the industrialized Central Lowlands, the cradle of the Scottish nation, the Southern Uplands, famous for their attractive scenery and health resorts, and the Highlands with an unspoiled natural environment and strong historical traditions. The capital of Scotland is Edinburgh.

Northern Ireland occupies the north-east section of the island of Ireland. The territory of Northern Ireland is 5,462 sq. miles and it has a population of 1.5 mln. It has a typical maritime, oceanic climate and is an agrarian-industrial region. On the coast, the chief occupations are shipbuilding and fishing. The capital of Northern Ireland is Belfast.

London's history begins about the year 43 A.D., when it was founded by the Romans as a military base. In the late 11th century London became the capital of England. Ever since the beginning of the 14th century, the reign of King Edward III, it has continued to increase in importance as a centre of commerce. In the 17th century the plague and the Great Fire of London almost ruined the city. However, it soon recovered and continued to expand and prosper.

The U.K is defined as a constitutional monarchy. The British Parliament is the oldest in the world and is known as the "mother of parliaments". It came into being in the late 13th century and consists of two chambers – the House of Commons, consisting of 635 elected Members of Parliament (MPs), and the House of Lords, a mainly hereditary upper house. The political party which gains a majority of members in the House of Commons in popular elections forms the government. In recent history, the government has been in the hands of one of the two major parties, Labour or Conservative. The party in government introduces proposals for new legislation (known as "bills") to Parliament. If, after three "readings", i.e. debates, a bill is approved by a majority of MPs, it then goes before the House of Lords. If the Lords accept the bill, it is placed before the Queen for the formal signature of approval and becomes an Act of Parliament (it becomes law). Otherwise, the bill returns to the Commons for further debate. However, if it is passed a second time by the House of Commons, the House of Lords may not veto it and the bill becomes law. Any MP may introduce a bill, including members of the opposition parties.

The traditional industries of coal-mining, metal working, engineering and textile manufacture, which were concentrated in the Midlands and Northern England are now in decline. Even the more modern branches of industry such as electronics face strong competition from abroad and service industries are gaining in importance. Great Britain has made major contributions to science, art, literature and world culture.

3. Answer the following questions:

1. What is the total area of Great Britain?
2. What parts does Great Britain consist of?
3. Where is the United Kingdom situated?
4. What is the state system in Britain?
5. Who is the head of the state in the U.K.?
6. What can you say about the monarchy in Great Britain?
7. What is the Supreme legislative authority in the U.K.?
8. Do you know anything from the history of the British Parliament?
9. What chambers is the British Parliament composed of?
10. Are seats in the Parliament hereditary or elected?
11. When does the bill return to the House of Commons for further debate?

12. What are the major political parties in Britain?
13. What is the climate of Great Britain?
14. What rivers of Great Britain do you know?
15. Is Wales a densely populated region?
16. Whom was London founded and when?
17. When did London become the capital of England?
18. What historical monuments and places of interest are there in London?
19. What are the traditional industries in the U.K.?
20. Has Great Britain made any contribution to science, art, literature and world culture?

4. Speaking about Great Britain:

Step 1. Choose a partner and ask each other questions about Great Britain introducing these questions with the following phrases:

Could you tell me …? Do you know …?
Do you happen to know …? Is it true that …?
I've heard that … Is it really true?
I'd like to know if …?
Could you explain why / where / how / what …?
What is your opinion about … ?
What do you think of … ?
Do you agree with …?
I wonder if you take part in …?

Step 2. Prove that:

a) The U.K. is defined as a constitutional monarchy.
b) The traditional industries are in decline in Britain.
c) The Queen's power is symbolic.
d) The House of Commons is considered more important.
e) The country has a typical maritime climate.

Use the following words and phrases: I think that…; Frankly speaking…; I'd like to call your attention to…; This is my point of view…; I'm sure that… .

Step 3. Divide the text into logical parts and try to annotate each of them.

Step 4. Get ready to speak about:

a) The official name of the state.
b) The capital of the U.K.
c) The official language and minority languages.
d) The geographical location of Great Britain.
e) The major parts of the U.K.
f) The state system of Great Britain.
g) The political parties of the country.
h) The traditional industries of Britain.

Step 5. Fill in the gaps with the words given below.

/settlement, nearly, the capital, dependent, cattle and sheep, grain, have been built, was founded, business centre, stretches, rainfall, food supplies, businessmen and financiers, engaged, developed it into./

For centuries, the British Isles have been famous for their ___ ___ ___, because the temperature and ___ favour the growing of grass rather than of ___. Today less than seven percent of the population are ___ in farming and the islands are largely ___ on other countries for their ___ ___. London ___ ___ hundreds of years before our era. On the banks of the Thames there was a small ___ named Llin-din. The Romans named Llindin as Londinium and ___ ___ ___ a large and rich city. In 1055, Londinium became London, ___ ___of Great Britain. Since that time many beautiful buildings, palaces and bridges ___ ___ ___ there. London today ___ for nearly 30 miles from north to south and for ___ the same extension from east to west.

The heart of London is the City, its financial and ___ ___ . Few people live there but thousands of clerks, ___ ___ ___ rush to it every day.

4. My Future Speciality: Landscape Architecture, Town and Regional Planning

Landscape Architecture. In Ukraine the landscape has been influenced by human activity over last decades. There is now increasing realization that responsible management of the environment is necessary for the future benefit of mankind. With this realization has come the desire to reclaim land laid waste by industrial dereliction, to improve landscape and to improve the quality of the outdoor environment in

general.

In these days of environmental concern, town and regional planning has an important part of play too. Its primary aim is to find the balance between the conflicting demands made on land, a limited resource. How do you reconcile the present and future demands of housing, recreation, industrial development, agriculture, the traffic network and the environment? Much planning and landscape designing activity is carried out by state institutions and a host of specialists – architects, planners, surveyors, geographers, designers, economists and many others.

The Work. Landscape architects or landscape designers are concerned with the design, planning and construction of the outdoor environment. While architects are responsible for designing buildings – the internal environment- landscape architects are responsible for designing the landscape around buildings- the external environment. They try to ensure that any changes made to the natural environment blend with what already exist to create an aesthetically pleasing whole.

They may work in urban areas and be involved in urban regeneration (including the layout of parks, gardens and housing estates) or in rural areas where emphasis is on minimizing the impact on the landscape of industrial buildings or the extraction industries. Landscape architects undertake projects, which can range in scale from designing a small garden to a complete inner city renewal plan. They collaborate closely with other professions, especially planners. The work of the planner varies to some extent with the type of employer. The key areas of work are understanding trends, analyzing data, and preparing reports and communication of ideas. Although much of the work is office-based, it also involves site visits and attendance at meetings and planning enquiries. Specialists oversee projects to ensure that the work meets financial and time specifications. They also concern with the long-term care and maintenance of the projects. These projects establish how best use can be made of the land within the authority, which areas should be allocated for housing, traffic schemes, recreation, industry and so on. A planner also needs to conduct research into the current features of the area – and then analyze how this will effect its future needs in terms of housing, employment, services, leisure industries, and transport. Your understanding of the social needs of a community is important, as is your understanding of the industrial and environmental issues. The following summaries the activities, which may fill your day of a planner:

Designing with all its detailed sub-activities, meeting inside and outside the office and administration of projects, sites and buildings, managing yourself and your projects, your staff, your practice; advising either informally or as a consultant; supervising trainees and assistants and possibly teaching at a school of town and regional planning.

Follow-up Education. Professional development both of yourself and your colleagues may encompass reading, receiving visitors from building trades and construction professionalists and a social and formal professional activities which keep the information flow going and mean the in-service training of planners and architects.

Qualities Required. Lands cape architects must have good design sense linked with creative imagination. They must have a real desire to make the physical environment more attractive. Knowledge of plants, soils, geology and buildings gained during training. A talent for drawing and draughting is necessary, as proposals have to be presented in the form of plans, technical drawings and sketches.

Good communication, skills and the ability to work in a team are important as landscape architects work with other specialists such as planners. Planers have to be versatile, flexible and possess good judgment. You need to be able to analyze, criticize and think clearly and objectively even under pressure. You should be able to argue your point but also listen to others and be able to communicate your thoughts and arguments clearly and accurately both in paper and orally. You should enjoy with a wide range of people and know how to explain your decision to people who have little ideas of planning rules.

In other words both landscape architects and planners need to be something of a diplomat, good with words, able to reason, prepared to see both sides of an argument, able to feel content with the best conclusion – not necessarily the ideal one – and not mind too much if, in the end, your advice is not taken.

Education and Training. An engineer engaged in landscape architecture, town and regional planning deals with guidance of construction, designing of rural and urban areas, traffic networks, municipal engineering buildings, area improvement ought to be well trained in the branch of survey, design, production, exploitation, repairment and reconstruction, research, marketing, management.

The State technical university in Rivne trains future landscape architects and planners at the town planning & development faculty. The

course of study includes general technical subjects (descriptive geometry and drawing, strength of materials, theoretical and building mechanics), special subjects (social, functional, economic, aesthetic and organizational essentials of city planning, architecture, landscape architecture, area improvement, municipal transport traffic schemes, reconstruction of urban structures), work-based courses (principles of engineering equipment; electric engineering, heat and water supply, sewerage systems, financing in towns and regional planning, economics of enterprise, economics of town and regional planning, essentials of law, ecology, environmental protection). All these courses now lead to diploma of higher school allowing some students to choose a postgraduate course leading to an alternative profession or occupation. It is very important that people enjoy their work as much as possible and enjoying work means choosing right career and placing.

5. My Future Speciality: Production Technologies of Building Constructions and Elements

This is an important branch of science that involves the methods and techniques of production of building constructions and elements. It deals with technical aspects of designing and constructing various kinds of units.

Today industrial methods are used extensively in construction operations: the work is organized according to the assembly-line principle and is highly mechanized. The production cycle in the construction industry lasts from a few months to a few years. Work is carried out by construction and assembly organizations that have at their command qualified workers and the support of design and research institutions.

On-site assembly of precast reinforced concrete parts has made it possible to construct larger buildings at faster rates. Large building units such as panels and blocks are prepared at factories and are the merely assembled at the site. Large prefabricated panels are used in about 50 per cent of the industrial projects.

Building-materials industry consists of various branches, that produce materials for building constructions and elements.

The ceramic industry manufactures decorative and sanitary materials. The cement industry produces binding materials. The asbestos-cement

industry makes covering and insulating materials. The brick, block and reinforced-concrete industries produce wall-building materials. Building stone and sands are produced by every materials industry. Some types of building materials such as construction, metal and wood products are manufactured by other industries, for example, by metal working and woodworking industries.

Design and research organizations that concentrate on improving the techniques of production play an important role in the development of the construction industry. There are also a number of specialized scientific research institutes such as Institute of Building Production of Ukraine, which studies the production technology of Building constructions and elements, the comprehensive mechanization of technological processes, and the scientific organization of work in construction etc.

Education and Training. National University trains future specialists in production technologies of building constructions and elements at the faculty building and architecture.

The course of study includes general technical subjects (descriptive geometry and drawing, strength of materials, theoretical and building mechanics), special subjects (materials science, technology of building products,civil and industrial architecture, reinforced concrete, metal and timber constructions, building technology and organization, construction economics, construction planning and management), work-based courses (essentials of law, science of theory and practice of patenting and protection of author's right, financing in production technologies of building constructions and elements), ecology, environmental protection, management. All these courses lead to a diploma of higher school allowing some students to choose a postgraduate course leading to an alternative profession or occupation. It is very important that people enjoy their work as much as possible and enjoying work means choosing career and placing.

Follow-up Education. Professional development of yourself and your colleagues may encompass reading, receiving visitors from building trades and construction professional and a social and formal professional activities which keep the information flow going and mean the in-service training of building engineers.

Qualities Required. Building engineers must have a good design sense linked with creative imagination. They must have a real desire to

make the construction products more up-to-date which meet the European standards for building constructions and elements. Knowledge of constructions, elements, building materiafiftgained during training. A talent for drawing and draughting is necessary as proposals have to be presented in the form of plans, technical drawings and sketches.

Good communication skills and the ability to work in a team are important as building engineers work with other specialists. You need to be able to analyze, criticise and think clearly and objectively even under pressure. You should be able to argue your point but also listen to others and be able to communicate your thoughts and arguments clearly and accurately both in paper and orally. You should enjoy a wide range of people and know how to explain your decision to people who have little ideas of construction rules.

6. My Future Speciality: Industrial and Civil Engineering

Construction is an important branch of the economy that involves the construction of new and the maintenance of existing buildings and permanent structures.

Structures can be classified according to the materials used as wooden, stone, concrete, reinforced concrete, steel structures and so on. According to their functions permanent structures can be divided into residential and public buildings (including houses, apartment buildings. government buildings, school buildings, community buildings in villages), industrial buildings (factories, plants, power stations).

In most countries housing and industrial construction is being carried out on a large scale. Hundreds of factories are producing prefab panels, metal frames, reinforced concrete arches and so on. To-day industrial methods are used extensively in construction operation: the work is organized according to the assembly-line principle and is highly mechanized. The production cycle in the construction industry lasts from a few months to a few years. Work is carried out by construction and assembly organizations that have at their disposal planners, designers, surveyors.

Building profession attracts a great number of young men and women as an honourable profession. The person entering this profession must have scientific attitude,'imagination, initiative and good judgement obtained by experience and serious work. Civil engineers have an

important aim – to provide people with all modern conveniences for a dwelling. The efforts of an engineer who designs a project and the constructor who builds a project are directed towards thesame goal namely, the creation of something which will serve the purpose for .which it is built. Construction is the ultimate objective of a design. The ultimate decisions of civil engineer should be based on a reasonable knowledge of new methods in construction. An engineer is also engaged in preparing plans and specifications and in supervising the construction of the project. It is the duty of the engineer to design the project which will most nearly satisfy the needs of the occupant at the lowest practical cost.

If you want to contribute to the beauty of a town or city, if you want to leave a memory of yourself in the history of that town or city do your best to learn the trade of civil engineer.

National University of Water Management and Natural Resources Use trains future civil engineers at the jouilding faculty. Students get good scientific training and study the existing industrial methods. When they become full-fledged builders they will develop new ones. Besides, the course of study includes general technical subjects (descriptive geometry and drawing, strength of materials, building machines, theoretical mechanics, geology, hydrology, heat engineering), special subjects (building materials, civil and industrial architecture, reinforced concrete, metal and timber constructions, building technology and organization, construction economy, construction planning and management, environmental protection), work-based courses (essentials of law, science of theory and practice of patenting and protection of author's right, financing in construction).

The study of courses is accompanied by work experience enabling the students to test their vocational preferences. Work experience helps them to obtain occupational and survival skills and establish a relationship with a particular employer which may lead to the offer of a permanent job after the graduation from the Academy. The engineer should know the perspective problems connected with vocational guidance such as usage of new technologies, improvement of technologies, up-to-date industrial methods.

After the graduation Дот the Academy young specialists are able to work as building engineers, chief engineers, development engineers, process engineers, job foremen, health and safety engineers on the

construction sites and enterprises; design engineers, designers at the project and survey institutes; junior and senior research workers at the research institutes'; teachers at higher and vocational schools.

The graduates may have their follow-up education at post- graduate courses of different institutes and universities at home and abroad and at in-service training of civil engineers. They usually participate in international exhibitions, conferences, congresses and symposia. It is very important that people enjoy their work as much as possible and enjoying work means choosing the right career and placing.

Vocabulary notes:

survival skills	вміння знайти своє місце в житті
satisfy the needs	задовольняти потреби
environmental protection	захист навколишнього середовища
work-based courses	предмети теоретичного та практичного циклів
essentials of law	правознавство
follow-up education	продовження освіти
in-service training	підвищення кваліфікації без відриву від виробництва
job foreman	майстер виробництва
process engineer	інженер-технолог
heat engineering	теплотехніка
full-fledged engineer	добре підготовлений інженер
to test vocational preference	перевірити себе в обраній професії
work experience	виробнича практика

Civil Engineering

I. Vocabulary and reading comprehension.

1. Read the following international words and give their Ukrainian equivalents:

civil, nature, construction, fortification, occupation, calculation, irrigation, project, public, finance, special, popular, port, hydroelectric, consultation.

2. Menorize the following words and expressions necessarry to comprehend the text:

civil engineering	цивільне будівництво
military engineering	військово-будівельна справа
to be engaged in smth.	займатися чим-небудь
to be responsible (for smth.)	відповідати, бути відповідальним
degree of involvement (with other fields)	ступінь зв'язку /з іншими галузями/
in contrast to	на відміну від
to make use of smth.	користуватися чим-небудь, використовувати
harbour	пристань
domestic dwelling	житловий будинок
multistorey flats	багатоквартирний будинок
with (in) reference to	відносно, стосовно /чого-небудь/
alloy	сплав
water supply	водопостачання
hydroelectric schemes	гідроелектричні проекти
precast (prefabricated) concrete	збірний залізобетон
reinforced concrete	залізобетон
prestressed concrete	попередньо напружений бетон
a great deal of	багато, велика кількість
hard and fast (dividing line)	непорушна, раз на завжди встановлена межа /лінія поділу/
honourable	почесний

3. Read the text and carry out the following assignments:

a) find the paragraph emphasizing the value of the work done by the civil engineers;

b) find the sentences explaining the difference between the word "building" and the term "structural engineering";

c) choose the best Ukrainian title, expressing the main idea of the text:

Планування і забудова міст;
Важлива і почесна професія;
Цивільне будівництво.

Civil Engineering

Civil engineering was not distinguished from other branches of engineering until 200 years ago.This term was first used to distinguish the work of the engineer with a non-military purpose from military engineering. Most early engineers were engaged in the canstruction of fortifications and were responsible for building the roads and bridges required for the movement of troops and supplies.

The Roman armies of occupation in Europe had brilliant engineers. After the collapse of the Roman Empire there was little progress in communications. It was only with the beginning of the Industrial Revolution, the invention of the steam engine and the realization of the potentialities in the use of iron that it revived. Roads, canals, railways, ports, harbours and bridges were then built by engineers who called theaselves "civil" in contrast to military engineers. This may have emphasized the value of thair work to the community.

Today, the scope of civil engineering has become very broad. It is subdivided into such as construction (all kinds of buildings), highway and railway engineering, hydraulic engineering (canals, dams, drainage and irrigation systems) and municipal engineering (city planning, traffic regulation, water supply, and sewerage).

Civil engineering is an extremely broad professional field. It must make use of many different branches of knowledge, including mathematics, theory of structures, hydraulics, soil mechanics, surveying, hydrology, geology, economics and the most recently a knowledge of computers. Civil engineering problems involve the physical, mathematical, earth, social, communication, and engineering sciences. Civil engineering projects involve many other professional areas, including law, public health, economics, management, finance, and other branches of engineering. The scope and complexity of the field, and its degree of involvement with other fields, has increased rapidly with the development of modern science and technology and the growth of population and national economy. Taken as a whole, modern civil engineering constitutes a vital element of national industry which involves large numbers of people of various special interests and occupations.

Speaking about civil engineering we must properly use the words “construction” and “building”.

The term "construction" is used to denote the erection, and repair of all types of buildings, roads, bridges, and other structures.

The word “building” is mainly used in the sense of domestic dwellings, including houses and, multistorey flats, schools, hospitals and office blocks, while “civil engineering” is used with reference to bridges, roads, harbours, water supply and hydroelectric schemes**.**

The term “structural engineering” means particularly the calculation and design of all kinds of structures whose strength is mostly provided by steel, reinforced, prestressed, or precast concrete, or other alloys. This work involves a great deal of mathematics and consultations from several different professions.

We should remember that there is no hard and fast dividing line between these terms.

Civil engineering is a very popular and honourable profession in our country.

4. Write out of the text terminological words and word-combinations referring to civil engineering.

5. Choose the correct variant and complete the sentences.

1. Most early engineers were engaged, in the construction of
   a) dams; *b) bridges,* *c) fortifications.*
2. *The* word " “building” is mainly used in the sense of …
   a) water supply, *b) roads,* *c) domestic dwellings.*
3. Civil engineering was not distinguished from other branches of engineering until…
   a) today, *b) 200 years ago,* *c) 50 years ago.*
4. Civil engineering is a very popular and …
   a) difficult, *b) extremely broad,*
   c) honourable profession.

6 Answer the following questions on the text:

1. What is civil engineering?
2. When was the term “civil engineering” used first?
3. What were most early engineers engaged in?
4. What branches is civil engineering subdivided into?
5. What branches of knowledge must civil engineering make use of?
6. What sciences is it connected with?

7. What is the difference between “construction” and “building”?
8. Why is civil engineering a popular and honourable profession?

7. Suggest subtitles for each paragraph of the text.
8. Express the main idea of the text in Ukrainian in the shortest possible way.
9. Render the text according to your own plan.
10. Annotate the text in English or in Utrainian.

CAREERS RELATED TO CONSTRUCTION INDUSTRY

The *architect* must be an artist, engineer, and executive. Special qualities are required of the architect. He or she must understand people. She or he must have a talent for creative design and have skill in math and science. And the architect must be able to communicate ideas and designs graphically.

The *architectural drafter* translates the ideas, sketches, and designs of an architect into sets of drawings from which a structure can be built. The work includes drawing, sketching, tracing, computation, and derailing.

The *city planner* studies and plans the development or redevelopment of large areas such as cities, communities, housing projects, commercial projects, and so forth. The planning takes into account the utilities and necessities required for today's living. After designs are completed, the individual buildings may be designed by other architects.

The *landscape architect* controls the development of the site, which includes earthwork, planting, layout of streets and walks, and the orientation of the structure. She or he should have an understanding of plant life and a background in math, art, architectural drafting, and rendering.

The *structural engineer*, through the use of calculations, designs the structural part of buildings. He or she is usually a civil engineer who specializes in structures. Of all the professional areas in the building trades, this is considered one of the most difficult, because of the high competence it requires in physics and math.

The *civil engineer* does the calculating and designing that are also done by the structural engineer. In addition, he or she may survey, or may conduct large-scale planning of utilities, roads, structures, harbors,

airfields, tunnels, bridges, and sewage plants. The field of civil engineering is so broad that a civil engineer has to specialize in one area, such as structures. The civil engineer's college degree is in civil engineering.

Electrical engineers form the largest group of engineers. The need for them is great in the computer sciences and in the fields of aviation. The electrical engineer in the building trades designs the electrical components of structures. The electrical engineer's college degree is in electrical engineering.

The *air-conditioning engineer* designs the heating, ventilation, air-conditioning, and refrigeration systems for structures. This person's college degree is in mechanical engineering, and he or she will specialize in air conditioning.

The *acoustics engineer* is responsible for controlling sound in the structure. However, this work is not confined to buildings; it can also be applied to noise suppression in machines, industrial factories, aircraft, and rockets; anywhere there is loud noise. This field is very technical. The acoustics engineer needs a broad background in math and physics. Her or his college degree is in physics, engineering, architecture, or math.

The *mechanical engineer* is the engineer who does not specialize in one area. He or she works in production, the use of power, and machines which use power. The mechanical engineer who works in the building trades designs for operational parts of a structure. The degree is in mechanical engineering.

The *estimator* prepares estimates of the cost of building projects by figuring material requirements and labor costs. Her or his work must be accurate, because mistakes are expensive.

An estimator working in large construction should have a general or specialized college degree and knowledge of construction and building. His or her math skills must be good. An estimator for small construction, such as that of homes, can come from the ranks ol the craftsman. The estimator's skills are largely learned in the office and in the field.

The *specification writer* prepares specifications (a written description of exact materials, methods of construction, finishes, and tests and performances of everything required for the structure). Knowledge of all types of construction is needed, as is a technical background and experience in building.

His or her college degree can be general or specialized. Specification writers for small construction can come from the ranks of the craftsman. The specification writer's skills are learned in the office and in the field.

The *surveyor* defines in both words and pictures (usually maps) the specific space, position, and topography of a piece of land. The accuracy of the work is essential for proper foundations and construction. This work is the first step in the construction of roads, airfields, bridges, dams, and other structures. Her or his college degree is in civil engineering.

The *architectural designer* designs and plans homes and other small buildings. She or he is usually an outstanding architectural drafter but does not have a degree in architecture. The engineering for their structures is done by architects or structural engineers.

Supplement III

Making Presentations: Key Points

This paper has been divided into 5 sections

The following checklist is a guide for your preparation.

1. Thinking About You're Audience

Determine the level of understanding

What are their expectations:

Ask around

2. Preparing your Presentation

Draw up a plan, with time limits, and identify objectives (max. of 3)

Be creative – brainstorm and mindmap

KISS: keep it short and simple

Use a variety of visual aids – but not too many

Know your room and equipment

3. Overcoming Nerves

Rehearse beforehand

Don't have too much material

Practice with equipment

Get perspective, think positive, use relaxation exercis

Be yourself!

4. The Presentation itself

Stand up, move around, establish eye contact

Don't be note-bound

Avoid fillers, runaways and apologies

Make it 3D

Project your voice

5. Questions

If it's a long presentation, make it interactive

Anticipate questions and formulate answers beforehand

Don't gather up notes and lose concentration

Ask for clarification if confused, repeat it for benefit of whole audience

Provide short and sharp answers

Speak to entire audience and not one questioner

Giving an Oral Presentation

Sub-skills	Functions	Recommended exponents
Introducing a presentation	Creating and introducing oneself	Good morning/afternoon. My name 's .../I am ... Let me introduce myself. Let me start by saying a few words about ...
General professional environment and routine	Presenting the title/subject	The subject of my presentation is ... The focus of my paper (academic) is ... Today I'd like to talk about... I'm going to tell you something about...
	Specifying the purpose/objective	We are here today to decide/ agree/learn about ... The purpose of the talk/ presentation is ... The talk /presentation is designed to ...
	Signposting the presentation	My presentation will be in ... parts. First/ Firstly/ First of all, I'll give you .... Second/secondly/Next/Then, ... Lastly/finally last of all.... I've divided my presentation into ... parts/sections. They are ... . I'll be developing ... main points. The first point will .... Second . … Lastly ... .
Sequencing and linking ideas	Sequencing / ordering	Firstly ... , secondly ... , thirdly ... . Then ... next... finally/lastly ... Let's start with ... Let's move /go onto ... Now we come to ... That brings us to ... Let's leave that... That covers ... Let's go back to ... Let me turn now to ...
	Giving reasons/causes	Therefore So, As a result, Consequently. That's why ... This is because of ... This is largely due to … It could lead to ... It may result in ...

Sub-skills	Functions	Recommended exponents
	Contrasting	But On the other hand. … Although ... . In spite of this, ... However, ...
	Comparing	Similarly, In the same way,
	Contradicting	In fact, Actually,
	Highlighting	… in particular, … especially
	Digressing	By the way, In passing,
	Giving examples	For example, For instance, Such as A good example of this is … To illustrate this point, ...
	Generalising	Usually Generally As a rule
Involving the audience	Asking rhetorical questions	What's the explanation for this? How can we explain this? How can we do about it? How will this affect ... ? What are the implications for … ?
	Referring to the audience	As I'm sure you Know /we'd all agree … We have all experienced ... You may remember ...
Describing and analysing performance[16]	Describing performance to date	The ... performed well/poorly. The .. has/have shown considerable/slight growth/improvement/decrease...
	Analysing performance	The main explanation for this is ... A particular/one/another reason is … A key problem is ...
	Describing	There is/has been a

[16] This is a sample specification for one type of presentation. Other types, e.g. product presentation, marketing presentation, etc., would need a different specification.

Sub-skills	Functions	Recommended exponents
	trends, charts and graphs	slight/dramatic/considerable/significant/moderate decrease/fall/drop/collapse/rise/increase in … … . remain(s)/has remained constant/stable … … has/have decreased/increased/fallen/risen dramatically/considerably/slightly/moderately
Using visual aids	Preparing the audience for a visual	Now, let's look at the position of... Now, I'll show you the ... For … the situation is very different. Let's move on now and took at ... The next slide shows ... If we now turn to the ... This chart compares ... and ... The (upper) part of the slide gives information about … You can see here the ... I'd like to draw your attention to ...
	Focusing the audience's attention	You can see the ... As you can see ... What is interesting/important is ... I'd like to draw your attention to ... Notice/Observe the ... It is important/interesting to notice that …
Ending a presentation	Summarising	To sum up... In brief... In short.... I'd like to sum up now … … I'll briefly summarise the main issues. Let me summarise briefly what I've said. if I can just sum up the main points. At this stage I'd /like to run through /to go over. Let's recap, shall we?
	Concluding	In conclusion, ... To conclude, ... As you can see, there are some very good reasons ... I'd like to leave you with the following thought/idea.
	Recommending	My/our suggestion/proposal/recommendation would be/is to ...

Sub-skills	Functions	Recommended exponents
		We recommend/I'd like to suggest/I propose setting up....
	Closing formalities	I'd be happy to answer any questions. If you have any questions, I'd be pleased to answer them. I would welcome any comments/suggestions. Thank you for your attention.
Handling questions	Clarifying questions	So, what you are asking is ... If I understand the question correctly, you would like to know … When you say ... do you mean ...? I'm sorry, I didn't hear. Which slide was it? Sorry, could you repeat that? I'm not sure what you're getting at.
	Avoiding giving an answer	Perhaps we could deal with that later. Can we talk about that another time? I'm afraid that's not my field. I don't have the figures with me. I'm sure Mr X could answer that question. That's interesting, but I'd prefer not to answer that today. I'm afraid I'm not the right person to answer that. Could we leave that till later? I'm not sure this is the right place/time to discuss this particular question.
	Checking the questioner is satisfied	May we go on? Does that answer your question? Is that clear?

English transliteration of the Ukrainian alphabet

Номер	Укр. літери	Лат. літери	Примітки	Приклади застосування
1	А	A	—	**Алушта – Alushta**
2	Б	B	—	**Борщагівка – Borschahivka**
3	В	V	—	**Вишгород – Vyshhorod**
4	Г	H, gh	H – у більшості випадків, gh – при відтворенні сполуки -зг-	**Гадяч – Hadiach;** **Згорани – Zghorany**
5	Ґ	G	—	**Галаган – Galagan**
6	Д	D	—	**Дон – Don**
7	Е	E	—	**Рівне – Rivne**
8	Є	Ye, ie	Ye – на початку слова ie – в інших позиціях	**Єнакієве – Yenakiieve;** **Наєнко – Naienko**
9	Ж	Zh	—	**Житомир – Zhytomyr**
10	З	Z	—	**Закарпаття – Zakarpattia**
11	И	Y	—	**Медвин – Medvyn**
12	І	I	—	**Іршава –Irshava**
13	Ї	I	Yi – на початку слова I – в інших позиціях	**Їжакевич – Yizhakevych;** **Кадіївка – Kadiivka**
14	Й	Y, I	Y – на початку слова I – в інших позиціях	**Йосипівка –Yosypivka** **Стрий – Stryi**
15	К	K	—	**Київ – Kyiv**
16	Л	L	—	**Лебедин – Lebedyn**
17	М	M	—	**Миколаїв – Mykolaiv**
18	Н	N	—	**Ніжин – Nizhyn**
19	О	O	—	**Одеса – Odesa**
20	П	P	—	**Полтава – Poltava**
21	Р	R	—	**Ромни – Romny**
22	С	S	—	**Суми – Sumy**
23	Т	T	—	**Тетерів –Teteriv**
24	У	U	—	**Ужгород – Uzhhorod**

25	Ф	F	—	**Фастів – Fastiv**
26	Х	Kh	—	**Харків – Kharkiv**
27	Ц	Ts	—	**Біла Церква – Bila Tserkva**
28	Ч	Ch	—	**Чернівці – Chernivtsi**
29	Ш	Sh	—	**Шостка – Shostka**
30	Щ	Sch	—	**Гоща – Hoscha**
31	Ь	‘	—	**Русь – Rus’; Львів – L’viv**
32	Ю	Yu, iu	Yu – на початку слова iu – в інших позиціях	**Юрій – Yurii; Крюківка – Kriukivka**
33	Я	Ya, ia	Ya – на початку слова ia – в інших позиціях	**Яготин – Yahotyn; Ічня – Ichnia**
34	‘ апостроф	‘		**Знам’янка – Znam’ianka**

Ordinary Everyday English Words and Their Technical Meanings

Everyday Word	Technical Meaning
arm	стріла крану
base	цоколь, плінтус
basket	орнамент(у вигляді кошикового плетіння), капітель коринфської колони
beard	зазублина
bed	ряд (каменю або цегли при кладці)
body	масив (кладки)
bone	забивати кілки при нівелюванні
breast	нижня частина балки, частина стіни між підлогою та підвіконням
bug	скоба
bush	втулка
butterfly	фанера «метелик» (цінні породи)
cat	джгут для конопатки стін зрубу
chief	капітальна стіна
coat	покриття
ear	затискач

foot	підошва фундаменту
frog	хрестовина
grass	стрічка шумів
head	капітель (колони), ригель, верхній брус (рами)
horse	рама
leaf	прицільна рамка
lip	носик ковша
monkey	баба (для забивання паль)
nose	головка домкрата
nut	гайка
pig	болванка
plate	плита, лист
plum	заповнювач(камінь) бутобетону
tree	вал
wind	лебідка
wing	флігель

Список слів, близьких за звучанням, але різних за значенням

1.	accident	випадок, випадковість, нещасний випадок; аварія
	incident	випадок; інцидент; епізод
2.	(to) affect	діяти, впливати, вражати
	(to) effect	викликати; справляти, виконувати
3.	allusion	згадка, посилання на щось
	illusion	ілюзія; самообман
4.	(to) attain	домагатися, досягати
	(to) obtain	одержувати, здобувати
5.	benzene	бензол
	benzine	бензин
6.	carton	картон
	cartoon	карикатура, мультфільм
7.	civic	громадянський що відноситься до міського управління
	civil	цивільний (на відміну від військового), державний
8.	complement	доповнення, комплект
	compliment	комплімент, поздоровлення
9.	conscious	свідомий
	conscientious	сумлінний, совісний, добросовісний

10.	continual	що часто повторюється
	continuous	безперервний, тривалий
11.	data	дані, факти
	date	дата, число
12.	(to) deprecate	заперечувати, протестувати
	(to) depreciate	принижувати, недооцінювати
13.	die	штамп, матриця
	dye	барвник, забарвлення
14.	down	униз
	dawn	світанок
15.	draught	тяга повітря
	drought	посуха
16.	economic	економічний
	economical	економний
17.	electric	електричний
	electrical	що відноситься до електрики
18.	fermentation	ферментація
	fomentation	припарка, підбурювання
19.	gaol	в'язниця
	goal	гол. мета
20.	historic	історичний, що має історичне значення
	historical	історичний, що відноситься до історії
21.	human	людський
	humane	гуманний, людяний
22.	ingeniousin	винахідливий, дотепний
	genuous	щирий, прямий
23.	(to) melt	розтоплювати, танути
	(to) smelt	плавити (руду), топити (метал)
24.	meter	лічильник
	metre	метр
25.	moral	моральний
	ˌmorale	моральний стан
26.	patrol	патруль
	petrol	бензин, гас
	petrel	буревісник
27.	(to) persecute	піддавати гонінню, переслідувати
	(to) prosecute	звинувачувати, віддавати до суду

28.	personal	особистий, персональний
	personnel	персонал, особовий склад
29.	police	поліція
	policy	політика, курс
	politics	політичні події; переконання
30.	prescription	розпорядження, наказ, рецепт
	proscription	вигнання; оголошення поза законом
31.	principal	головний, основний, директор, начальник
	principle	принцип, правило; складова частина (речовини)
32.	same	однаковий
	some	кілька, якийсь
33.	stationary	стаціонарний, нерухомий
	stationery	канцелярське приладдя
34.	strip	вузька смужка чого-небудь; смуга (землі)
	stripe	нашивка, смужка
35.	temporally	тимчасово, не завжди
	temporarily	на короткий час
36.	translucent	що просвічується
	transparent	прозорий, ясний
37.	vacation	канікули
	vocation	професія, покликання
	avocation	побічне заняття
38.	(to) vary	змінюватися, мінятися, міняти
	very	дуже

Найбільш вживані складні прийменники

according to	відповідно до, залежно від
by means of	за допомогою
instead of	замість
in spite of	не дивлячись на
because of	через, з-за
in case of	у випадку, якщо
owing to	завдяки, внаслідок
thanks to	завдяки
due to	завдяки, через те, що
in addition to	додаток до, крім
with respect to	щодо (чогось)

Таблиця неправильних дієслів

Infinitive	Past Indefinite	Past Participle	Translation
be	was/were	been	*бути*
bear	bore	borne	*переносити*
beat	beat	beaten	*бити*
become	became	become	*ставати*
begin	began	begun	*починати*
bite	bit	bitten	*кусати*
blow	blew	blown	*дути*
break	broke	broken	*ламати*
bring	brought	brought	*приносити*
build	built	built	*будувати*
burn	burnt	burnt	*горіти*
burst	burst	burst	*вибухати*
buy	bought	bought	*купувати*
catch	caught	caught	*ловити*
choose	chose	chosen	*вибирати*
come	came	come	*приходити*
cost	cost	cost	*коштувати*
cut	cut	cut	*різати*
deal	dealt	dealt	*роздавати*
dig	dug	dug	*копати*
do	did	done	*робити*
draw	drew	drawn	*малювати*
dream	dreamt	dreamt	*мріяти*
drink	drank	drunk	*пити*
drive	drove	driven	*водити (машину/таксі)*
eat	ate	eaten	*їсти*
fall	fell	fallen	*падати*
feed	fed	fed	*годувати*
feel	felt	felt	*відчувати*
fight	fought	fought	*битися*
find	found	found	*знаходити*
fly	flew	flown	*літати*
forget	forgot	forgotten	*забувати*
forgive	forgave	forgiven	*пробачати*
freeze	froze	frozen	*заморожувати*
get	got	got	*отримувати*
give	gave	given	*давати*
go	went	gone	*іти*
grow	grew	grown	*рости*

Infinitive	Past Indefinite	Past Participle	Translation
hang	hung	hung	*вішати*
have	had	had	*мати*
hear	heard	heard	*чути*
hide	hid	hidden	*ховати*
hit	hit	hit	*вдарити*
hold	held	held	*тримати*
hurt	hurt	hurt	*ранити*
keep	kept	kept	*зберігати*
know	knew	known	*знати*
lay	laid	laid	*класти*
lead	led	led	*вести за собою*
learn	learnt	learnt	*вивчати*
leave	left	left	*покидати*
lend	lent	lent	*позичати*
let	let	let	*дозволяти*
lie	lay	lain	*лежати*
light	lit	lit	*запалювати*
lose	lost	lost	*губити*
make	made	made	*робити*
mean	meant	meant	*означати*
meet	met	met	*зустрічати*
pay	paid	paid	*платити*
put	put	put	*класти*
read	read	read	*читати*
ride	rode	ridden	*кататися*
ring	rang	rung	*дзвонити*
rise	rose	risen	*підійматися*
run	ran	run	*бігти*
say	said	said	*говорити*
see	saw	seen	*бачити*
seek	sought	sought	*шукати*
sell	sold	sold	*продавати*
send	sent	sent	*відсилати*
set	set	set	*садити*
sew	sewed	sewn	*шити*
shake	shook	shaken	*трясти*
shine	shone	shone	*світити*
shoot	shot	shot	*стріляти*
show	showed	shown	*показувати*
shut	shut	shut	*зачиняти*

Infinitive	Past Indefinite	Past Participle	Translation
sing	sang	sung	*співати*
sit	sat	sat	*сидіти*
sleep	slept	slept	*спати*
smell	smelt	smelt	*пахнути*
speak	spoke	spoken	*розмовляти*
spell	spelt	spelt	*промовляти по буквах*
spend	spent	spent	*проводити*
spill	spilt	spilt	*розливати*
split	split	split	*розколювати*
spoil	spoilt	spoilt	*псувати*
spread	spread	spread	*розповсюджувати*
spring	sprang	sprung	*підскакувати*
stand	stood	stood	*стояти*
steal	stole	stolen	*красти*
stick	stuck	stuck	*приклеювати*
sting	stung	stung	*жалити*
strike	stroke	struck	*вдаряти*
swear	swore	sworn	*присягатися*
sweep	swept	swept	*підмітати*
swim	swam	swum	*плавати*
take	took	taken	*брати*
teach	taught	taught	*викладати*
tear	tore	torn	*рвати*
tell	told	told	*говорити*
think	thought	thought	*думати*
throw	threw	thrown	*кидати*
understand	understood	understood	*розуміти*
wake	woke	woken	*будити*
wear	wore	worn	*носити*
win	won	won	*вигравати*
write	wrote	written	*писати*

Звичайні та десяткові дроби

У простих дробах чисельником є кількісний числівник, а знаменником – порядковий числівник: 1/3 – *a (one) third,* 1/5 – *one fifth.* Але 1/2 – ***one*** *half (*не *one second),* 1/4 – *one quarter.* **Коли чисельник більше одиниці,** то знаменник вживається із закінченням *-s:* 3/5 – *three fifths,* 5/6 – *five sixths.*

Іменник вживається в однині після дробового чисельника 2/3 *ton*

(two thirds of ***a*** *ton),* 3/4 *kilometre (three quarters of a kilometre).*

Іменник, до якого відноситься мішане число, вживається у множині: $2^{1/2}$ *tons (two and half tons).*

У **десяткових дробах** ціла частина відокремлюється від дробової **крапкою,** а не комою. Кожна цифра десяткового дробу читається окремо. Крапка, яка відокремлює ціле число від дробу, читається *point [point].* Нуль читається ***nought [no:t],*** в Америці — *zero fzirouj.* 15.25 — *fifteen point two five;* 3.78 – *three point seven eight.*

Іменник вживається **в однині** з прийменником *of* коли ціла частина десяткового дробу **дорівнює нулю –** 0.83 ton *(nought point eight three ton),* в інших випадках іменник вживається в множині.

0/43 *metre – point four three of a metre*

2.76 *metres – two point seven six metres.*

При **позначенні сторінок параграфів, частин книг порядкові числівники заміняються кількісними числівниками,** які стоять після іменника. Іменник в таких випадках вживається без артикля.

the first part. = part one	перша частина
the twenty first page = page 21	двадцять перша сторінка

Кількісні числівники вживаються для позначення номерів будинків, кімнат, трамваїв, розмірів одежі та взуття.

Він живе в квартирі № 10.	*He lives in flat 10.*
Відкрийте книжку на 20 сторінці.	*Open the book page twenty.*

Mathematics Related to Construction Industry

The square of the hypotenuse of a right triangle is equal to the sum of the squares of the other two sides.

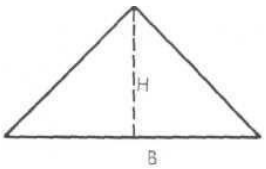
$$C^2 = A^2 + B^2.$$

The square of one side of a right triangle equals the squares of the hypotenuse minus the square of the other side.

$$A^2 = C^2 - B^2$$

The area of a triangle is equal to one-half the product of the base and height.

$$A = \frac{1}{2} \cdot B \times H \qquad \text{or} \qquad \frac{B \times H}{2}.$$



$$\pi = 3{,}1416 \quad \text{or} \quad \frac{22}{7}.$$

The circumference of a circle is equal to π multiplied by the diameter.

$$C = \pi \times D .$$

The area of a circle is equal to π multiplied by the radius squared.

$$A = \pi \times R^2 .$$

The area of a circle is equal to the circumference multiplied by one-half the radius.

$$A = C \times \frac{1}{2} R \quad \text{or} \quad \frac{C \times R}{2} .$$

To find the area of a square or rectangle, multiply the length of one side by the length of an adjacent side.

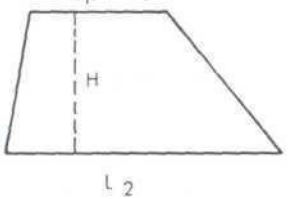
$$A = S_1 \times S_2 .$$

To find the perimeter of a polygon, add the length of all sides.

$$P = S_1 + S_2 + S_3 + S_4 + S_5 + \ldots + S_n .$$

To find the area of a trapezoid, multiply its height by one-half the sum of the parallel sides.

$$A = \frac{1}{2} \cdot (L_1 + L_2) H \quad \text{or} \quad A = \frac{(L_1 + L_2) H}{2} .$$



To find the volume of a square or rectangular solid, multiply the length by the height by the width.

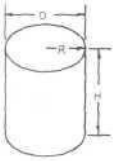
$$V = L \times H \times W .$$

To find the volume of a sphere, multiply the diameter cubed by π by one-sixth.

$$V = \frac{1}{6} \times \pi \times D^3 \quad \text{or} \quad V = \frac{\pi \times D^3}{6} .$$

To find the volume of a cylinder, multiply the area of its base by its height.

$$V = \pi R^2 \times H$$



To find the volume of a pyramid, multiply the height by one-third its base area.

$$V = \frac{1}{3} H \times W \times D\,.$$

To find the volume of a cone, multiply one-third of the product of its base area by the height.

$$V = \frac{1}{3} \pi R^2 \times H\,.$$

The diagonal of a square is equal to the square root of twice the area.

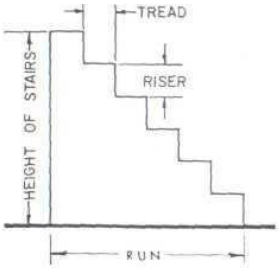
$$D = \sqrt{2A}\,.$$

To find the tread width, divide the run of the stairs by the number of treads. This is always one less tread than riser.

$$\text{Tread width} = \frac{\text{Run of stairs}}{\text{Number of treads}}\,.$$

To find the height of a riser, divide the height of the stairs by the number of risers.

$$\text{Riser height} = \frac{\text{Height of stairs}}{\text{Number or stairs}}\,.$$



To find the number of risers, divide the height of the stairs by the height of each riser.

$$\text{Riser number} = \frac{\text{Height of stairs}}{\text{Height of risers}}.$$

To find the number of board feet in a piece of lumber, multiply the length in feet by the width in inches by the thickness in inches, divided by 12.

$$BF = \frac{L \times W \times T}{12}.$$

To find the electrical resistance in a circuit, divide the voltage (E) by the amperage (I).

$$R = \frac{E}{I}.$$

To find the electric current in amperes (I) in a circuit, divide the voltage (E) by the resistance in ohms (R).

$$I = \frac{E}{R}.$$

To find the voltage in an electric circuit, multiply the current in amperes (I) by the resistance in ohms (R).

$$E = I \times R.$$

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АНГЛІЙСЬКА МОВА

Навчальний посібник

Для студентів напряму
підготовки 6.060101 «Будівництво»

Комп'ютерний набір і верстка *Глуха І.М.*

Дизайн обкладинки *Петровець О.П.*

Підписано до друку 29 квітня 2011 р. Формат 60x84 1/16. Папір друкарський № 1. Гарнітура Times. Друк трафаретний. Ум.-друк. арк. 12

Тираж _100_ прим.

Редакційно-видавничий центр
Національного університету
водного господарства та природокористування
33000, Рівне, вул. Соборна, 11.