MINISTRY OF CULTURE OF UKRAINE

KHARKIV STATE ACADEMY OF DESIGN AND ARTS

Faculty of“ENVIRONMENTAL DESIGN”

Department of“Environmental Design”

Shen Binzi（Shabnam）

MEANS OF FORMING THE DESIGN OF THE ARCHITECTURAL AND LANDSCAPE ENVIRONMENT FOR EDUCATIONAL EXCURSIONS (ON EXAMPLE OF THE "GREEN APPLE PARADISE" IN THE TOWN OF YANGZHAI, YANCHENG)

Qualification work for obtaining the SVO «Master»

in the specialty B2 Design OPP «Design of the architectural and landscape environment»

The qualification work contains the results of one's own research.

The use of ideas, results and texts of other authors must be referenced to the appropriate source.

Shen Binzi（Shabnam）

Scientific advisor: Svitlana KRYVUTS, PhD, Associate Professor, Professor in the Department of Environmental Design

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Thesis Proposal Literature Review Report

Title of the report: Means of forming the design of the architectural and landscape environment for educational excursions (on example of the "Green Apple Paradise" in the town of Yangzhai, Yancheng)

Student ID: S24101357049

Name: Shen Binzi

ABSTRACT

This qualification thesis investigates the formation of architectural and landscape environments for educational excursions in rural agricultural areas. The research combines place-based design with experiential learning theory and examines the relationship between local resources, agricultural knowledge, learning activities and spatial organization. Literature review, conceptual analysis, analogue comparison, site investigation and practice-oriented design are applied. Green Apple Paradise in Yangzhai Town, Yancheng, is selected as the practical case. Its design concept is based on the relationship between the former course of the Yellow River, sandy soil, fruit-tree growth and local agricultural production.

The practical proposal integrates interior renovation, an added second storey, architectural façade improvement and surrounding landscape design. The first floor focuses on agricultural cognition and hands- on activities, while the second floor supports knowledge interpretation, discussion and display of learning outcomes. Outdoor spaces extend indoor learning via seasonal planting, fruit-tree observation and group work. The learning process combines experience, observation, knowledge formation, experimentation and outcome sharing. The “Growth Line” concept, derived from ancient river traces, tree roots and branches, forms the core spatial language. Soil layers and orchard rows shape exhibition interfaces, façade divisions, paving patterns and planting layouts. Sand beige, warm off- white grey, timber and dark grey metal compose the primary material palette, with apple green

applied sparingly as an accent. This project illustrates how local identity can be conveyed through environmental processes, agricultural practices and learning experiences instead of superficial decorative mimicry. It offers a design strategy for rural agricultural education spaces that operate all year round.

Keywords: Educational Excursions; Architectural Environment; Landscape Environment; Place-Based Design; Experiential Learning; Agricultural Education; Green Apple Paradise

АНОТАЦІЯ

У цій дипломній роботі досліджується формування архітектурного та ландша фтного середовища для навчальних екскурсій у сільських сільськогосподарсь ких районах. Дослідження поєднує місцеорієнтоване проектування з теорією досвідного навчання та аналізує взаємозв'язок між місцевими ресурсами, сіль ськогосподарськими знаннями, навчальними заходами та просторовою органі зацією. Застосовуються огляд літератури, концептуальний аналіз, аналогічне порівняння, обстеження місцевості та практико-орієнтоване проектування. В якості практичного прикладу обрано «Рай зелених яблук» у містечку Янчжай, місто Яньчен. Концепція його проектування ґрунтується на взаємозв'язку мі ж колишнім руслом річки Хуанхе, піщаним ґрунтом, вирощуванням фруктови х дерев та місцевим сільськогосподарським виробництвом.

Ця практична пропозиція поєднує в собі реконструкцію інтер'єру, добудову д ругого поверху, архітектурне оновлення фасаду та ландшафтне оформлення п рилеглої території. Перший поверх присвячений ознайомленню з сільським г осподарством та практичним заняттям, тоді як другий поверх призначений дл я осмислення знань, обговорення та демонстрації результатів навчання. Зовні шні простори розширюють можливості навчання в приміщенні завдяки сезон ним посадкам, спостереженню за фруктовими деревами та груповій роботі. Н

авчальний процес поєднує досвід, спостереження, формування знань, експери менти та обмін результатами. Концепція «Лінія росту», похідна від стародавн іх слідів річок, коренів та гілок дерев, становить основу просторової мови. Ш ари ґрунту та ряди саду визначають форми виставкових просторів, поділ фаса ду, візерунки мощення та схеми озеленення. Пісочно-бежевий, теплий білуват о-сірий, дерево та темно-сірий метал складають основну палітру матеріалів, а яблучно-зелений колір використовується помірковано як акцент. Цей проєкт і люструє, як місцеву ідентичність можна передати через екологічні процеси, сі льськогосподарські практики та навчальний досвід, а не через поверхневе дек оративне наслідування. Він пропонує стратегію проектування сільських освіт ніх просторів сільськогосподарського спрямування, що функціонують цілий р ік.

Ключові слова: Навчальні екскурсії; Архітектурне середовище; Ландшафтн е середовище; Проектування з урахуванням особливостей місця; Навчання на основі досвіду; Сільськогосподарська освіта; «Рай зелених яблук»

INTRODUCTION

As such, the rural areas in China are combining the elements of production, education, culture, and services at the same location, thereby requiring the development of a new kind of rural space that would be specifically focused on education and not agritourism. Yet, the majority of the current rural learning bases are still more focused on sightseeing than education, on fruit picking instead of the learning process itself, and on seasonal activities as opposed to year-round educational programs. Moreover, local culture is only used as decorative element.

Green Apple Paradise in Yangzhai Town directly reflects these challenges. Its central glass hall and surrounding container structures have significant spatial potential, but their functions, circulation, public image and educational scenarios have not yet been organized into an integrated system. Therefore, this research asks: **How can the relationship between Yangzhai's land conditions, fruit cultivation and agricultural technologies be translated into an architectural and landscape environment that is learnable, operational and sustainable?**

Aim： To summarise design methods for rural architectural and landscape environments serving educational excursions, and apply them to the spatial optimisation of Green Apple Paradise.

Research Tasks:

1.Define educational excursions and distinguish them from agritourism and general rural leisure.

2.Review design methods for rural agricultural educational-excursion architecture and landscape.

3.Analyse how local ecology, industry and culture inform the design.

4.Develop an integrated design for Green Apple Paradise's indoor architecture and adjacent landscape.

5.Discuss feasibility and potential transferability through design principles, technical considerations and scheme evaluation.

Object： Rural architectural and landscape environments for agricultural educational excursions.

Subject： Design approaches for translating local agricultural resources and place-based knowledge into educational spaces.

Territorial and Chronological Frameworks： Yangzhai Town, Funing County, Yancheng, Jiangsu, focused on the Green Apple Paradise site and its immediate surroundings; 2024–2026, with earlier material used only for background on the former Yellow River course.

Research Method： Literature review and conceptual analysis; comparative analysis of domestic and international analogues; site survey and measured drawing; behavioural observation; interview/questionnaire; practice-oriented design; multi-criteria scheme evaluation.

Novelty： Theoretically, this research shifts the understanding of locality from symbolic decoration toward the translation of relationships among land, industry, activities and space. Practically, it provides an applicable design approach for a rural project that reuses existing modular structures and requires year-round operation.

Theoretical and Practical Significance： Theoretically, this research shifts the understanding of locality from symbolic decoration toward the translation of relationships among land, industry, activities and space. Practically, it provides an

applicable design approach for a rural project that reuses existing modular structures and requires year-round operation.

Structure and Volume of the Work: The thesis consists of an Introduction, three main chapters, General Conclusions, a List of Used Sources and Appendices.

CHAPTER 1. HISTORIOGRAPHY OF THE ISSUE AND RESEARCH METHODS

1.1 State of the question's study in modern scientific and theoretical sources

Rural spaces in China are increasingly becoming multifunctional environments integrating agriculture, education and public services. This transformation has created new demands for educational excursion environments that combine local resources, learning activities and spatial organization. However, existing studies mainly focus on rural tourism development, curriculum design or rural regeneration, while the spatial translation of agricultural knowledge within small-scale rural buildings remains insufficiently explored.

The theory of place-based design offers a good basis for the study of the relationship between locality and space. Traditional regional theories used to consider local forms, local materials, and local symbols. However, modern theories try to pay more attention to the relationship between nature, production, socio-cultural processes, and space [1, 2]. According to them, locality needs to be regarded as a process of discovery and transformation of local relations rather than as reproduction of local image.

Theory of experiential learning helps to transform local resources into learning experiences. Learning does not happen via information transfer alone; rather, it happens through the processes of observing, reflecting, and practicing [1-3]. Therefore, educational environments should support interaction between learners, materials, activities and spatial settings [4], creating connections between indoor learning spaces and outdoor environments [5, 6].

Research on rural educational tourism and study-based travel further emphasizes the relationship between learners, knowledge and places[7]. Existing studies have

explored curriculum development, resource integration and operational models [8-10], but relatively limited attention has been given to how architectural and landscape environments support educational processes. Similarly, agritourism research often discusses tourism functions and rural experiences, while the adaptation of small existing buildings for year-round educational use remains underexplored.

Therefore, this research identifies a gap in integrating place-based design, experiential learning and rural architectural renovation. Taking Green Apple Paradise in Yangzhai Town as a case study, this research explores how the relationship between land, fruit production, agricultural technology and learning experience can be transformed into an educational architectural and landscape environment.

1.2 Conceptual and terminological apparatus

In the light of growing integration between agriculture, education, and tourism in the rural context, terms like "educational field trip," "agritourism," "rural educational tourism," and "nature education" are frequently used synonymously. Nevertheless, these concepts signify different kinds of relationships between activity, educational goals and environment. That is why this research defines the above-mentioned concepts in order to create a conceptual framework for analyzing Green Apple Paradise.

Agritourism means tourism experiences in rural settings that are linked to agricultural production and the landscape through multiple roles such as recreation, cultural experience, and education. The current research shows that agritourism increases the value of agricultural resources through visitation and rural

experiences. Nevertheless, education is only one of many roles that agritourism can play. For example, rural tours and fruit-picking are types of experiences that do not imply any educational process. On the other hand, the educational trip implies having specific goals of education, organized activities, guidance and some outcomes of education. It means that the main distinction of agritourism lies in using local resources just for visiting or for learning.

Study tour or educational tourism in the countryside is an amalgam of education and the experience of the region. The aspect of learning by direct engagement with the surroundings of the regions, rather than just observation, is highlighted in experiential learning.Kolb's theory explains learning as a cycle of concrete experience, reflective observation, abstract conceptualization and active experimentation. Accordingly, agricultural educational spaces should support continuous processes of observation, practice and reflection, where indoor teaching spaces and outdoor agricultural environments jointly form a learning sequence.

Place-based design explains why educational activities should be connected with specific locations[11, 12]. Contemporary place-based studies move beyond the imitation of local forms and symbols, focusing instead on the relationships among natural conditions, production systems, social practices and local meanings. In this research, locality is understood as the relationship between the sandy soil environment of the former Yellow River course, Yangzhai's fruit cultivation system, agricultural technology and educational activities. Therefore, Green Apple Paradise is not designed as an "apple-themed" rural space, but as an environment where local agricultural knowledge is translated into spatial experiences.

Architectural environment and landscape environment are considered the physical carriers of educational activities. Architectural environment consists of spatial arrangement, interior programs, facilities, and activities[13]. It offers a space for

teaching, exhibitions, experiments, and communications. Landscape environment consists of entrances, courtyards, outdoor classes, plantings, and agriculture trails. It helps in observation and practical learning. In the current study, the two environments complement each other to provide an integrated educational experience.

Based on the above definitions, this study defines an agricultural educational experience center as a spatial environment that transforms local agricultural knowledge into structured learning experiences through organized activities, experiential participation and architectural–landscape settings.The basic principles which define educational events involve five elements, such as explicit learning aims, task organization, local knowledge, bodily involvement, and feedback on outcomes. Only through becoming the means of knowledge acquisition, rather than just an environment for relaxation, can agricultural resources be regarded as educational excursion events.

1.3 Research methods

In this research, an application-based methodology is utilized, which involves theoretical analysis, case studies, resource investigations, design practices, and design evaluations, thus forming a link between theoretical analyses and design choices of space. The methodology in the research process proceeds through theoretical analysis, resource investigation, design interpretation, and design evaluation and verification. Through analyzing the relationship between local agricultural resources and spatial environment, the research investigates approaches to converting these resources into educational experience environment.

Literature review is used to establish the theoretical framework of this research.

Relevant studies on place-based design [14-16], experiential learning, rural educational tourism and agritourism [17] are examined to understand the relationship between local resources, learning processes and spatial environments. The literature analysis provides theoretical support for subsequent case studies and design evaluation. Meanwhile, conceptual comparisons are conducted to clarify the differences between educational excursions and general agritourism, providing a conceptual foundation for the study of agricultural educational experience spaces.

Case analysis is conducted to investigate representative rural educational and agricultural experience projects. The selected cases are compared according to functional organisation, spatial circulation, interactive approaches, indoor–outdoor relationships, local expression, material strategies and operational models. Rather than replicating existing design forms, case analysis aims to identify transferable spatial strategies and explore how agricultural resources can be transformed into educational experiences through architectural and landscape environments.

Site investigation and user analysis are conducted to obtain first-hand information about Green Apple Paradise. The investigation focuses on the existing buildings, modular structures, surrounding agricultural environment and spatial conditions, including architectural dimensions, spatial organisation, structural conditions, entrances, equipment systems and indoor–outdoor connections. Meanwhile, analysis of potential users and relevant participants is conducted to understand operational requirements, agricultural production knowledge and educational activity needs, providing a basis for functional organisation, experience sequences and spatial planning.

Based on theoretical research, case analysis and site investigation, the research develops the design proposal through a practice-oriented process. The design translation process includes the identification and selection of local resources,

adaptive intervention within the existing space, transformation of agricultural knowledge into spatial experiences, and verification of the final experiential outcomes. This allows for the integration of local agricultural resource and space condition analysis along with principles of experience-based learning in the form of layout, circulation systems, and architectural-landscape connections. This design solution is created and communicated through drawings, spatial models and visualizations.

Conclusions to the first chapter

1.The theoretical sources review helped understand the relationships between educational field trips, agritourism, experiential learning, and rural education environments. It became clear that educational field trips have to be organized around learning goals, activity-based and participatory, rather than sightseeing-based.

2.The theoretical basis of the transformation of local agricultural resources into spatial learning opportunities by means of the analysis of place-based and experiential learning theories. The interrelationships between environment, production process, knowledge transfer, and spatial arrangement were found to be an essential ground for rural education spaces design.

3.The research methods were formed through the use of literature review, theoretical analysis, case comparison, site investigation and design approach. It creates a link between theoretical research and further design process of Green Apple Paradise.

4. Through the review of the literature review, it is found that most of the current studies have been focusing on the topic of rural tourism development, organization

of curriculum or agricultural revival, whereas the process of spatial transformation of the agricultural knowledge into the architectural and landscape space needs further investigation.

5. With the help of the theoretical foundation and methods of research, the research direction was determined to be the combination of place-based design, experiential learning and rural architecture renewal in Chapter 3.

CHAPTER 2. ANALYSIS OF DESIGN THEORY AND PRACTICE

2.1 Educational excursion activities and user needs

The Green Apple Paradise is not a typical sightseeing or picking garden, but a unique agriculture education experience centre.The project site covers approximately 1,648 m^2, while the renovated building and newly added second floor provide approximately 974 m^2 of educational and supporting spaces.Because of the small scale of the project, it is intended for use by groups visiting the site for educational purposes, as well as for family visits and regular tourists.

Spatial considerations for the education-related activities are concentrated on the creation of a comprehensive process of experience that consists of an introduction, learning knowledge, agriculture observation, interactive practice, making, results demonstration and communication. Thus, the space should be able to facilitate flexibility of transitions among various activities instead of a fixed classroom concept. In addition, operational concerns related to the preparation, storage, equipment management, cleaning and service circulation must also be considered. Proper spatial organization becomes necessary to minimize conflicts among various users and ensure continuous experience.

This plan uses a flexible and multi-period operating system, which combines the education tours, workshops, agriculture experience for families, agriculture-themed activities, and agriculture exhibition. The functions like tasting, recreation, and retail have been developed as a part of the education tour to enable better connection between agricultural education and local industry development. Through the combination of the learning programs inside and the agriculture environment outside, it is possible to turn Green Apple Paradise into a small agricultural education experience center that operates year-round, thus laying a solid foundation for future functional planning and space strategy.

2.2 Experiential learning and spatial organization

In accordance with Kolb's experiential learning theory, learning in agriculture should not be confined to mere information transfer, but rather involve the process of knowledge creation through experience and reflection [18]. Thus, Green Apple Paradise converts the four stages of experiential learning into activities and spaces. These include concrete experience, reflective observation, abstract conceptualization and active experimentation, thereby enabling the participant to progress from experiencing the agricultural phenomenon to comprehending production principles and using the knowledge gained. It is also well-known from earlier research findings that activities, reflection and experiments help in acquiring knowledge better than mere information transfer.

Concrete experience stresses actual engagement with agricultural materials and tools. The project opts for real agricultural materials and practical experience rather than constructing an artificial orchard inside. Some of the activities include touching the soil, studying the roots and branches, checking the quality of fruits, material identification, and processing.

Reflective Observation is a phase that requires the participants to document and analyze the results obtained including variations in soil composition, plant growth, and cultivation processes. It therefore follows that the relevant environment should facilitate observation, analysis, and communication [19], and not just visualization.

In the process of abstract conceptualization, diagrams, models, digital explanation, and brief descriptions are employed in order to change actual experience into agricultural information. It enables people to have knowledge about the interrelationships between soil, roots, flowers, fruits, and cultivation management.

The stage of active experimentation enables learners to use their knowledge through activities such as simulated pollination, pruning, bagging, fruit grading, processing and creative presentation. All these activities need to set out their learning objectives, materials needed, time and desired outcomes in order to ensure that interaction contributes to learning and not just entertainment [20].

Because there is only a limited outdoor space available, the Green Apple Paradise employs the indoor agricultural learning strategy that is based on "simulation rather than imitation". It incorporates real objects such as soil samples, roots, branches, agricultural equipment, and processing equipment to compensate for the lack of functions of large agricultural fields. The design of the space is based on the process of introduction/gathering, soil discovery, plant growth, cultivation management, grading/processing, creation, and taste-sharing. Being the main space used by everybody in the space, the central hall can be easily adapted depending on the activity taking place. Instead of being based only on the exhibition process, it focuses on observing, operating, interacting, and experiencing [21].

2.3 Analysis of domestic and international analogues

Case 1: China's Liuba Bee Museum

The Liuba Bee Museum is a modest rural building that is designed using bee resources in the locality. The project is a combination of agriculture, ecology, and the public sphere by means of the methods of exhibition, interactive experience, and environmental design. Instead of being purely an information center about bees, the museum provides the link between local production and visitors' learning process, thereby making it possible for people to learn about the connection between agricultural production and the environment through spatial interaction.

Case 2: China's Taishang Strawberry Park in Xuzhou

Taishang Strawberry Park in Xuzhou is designed according to the local strawberry industry, integrating agricultural production, picking experience, leisure activities and educational activities together into a complete model of rural agricultural experience. The project inspires tourists not only to enjoy the fruits but to involve themselves in agricultural production process by means of the strawberry planting, fruit observation, harvesting activity and agricultural education knowledge. In this way, fruit industry can be changed into educational resources from scenic resources through the process of cultivation and production knowledge.

Case 3: FarmED Agricultural Education Centre, UK

FarmED is a center of agricultural education in the UK that combines sustainable agricultural education, community activities, and learning. It is notable for the combination of indoor education space and outdoor agricultural environment into one educational process from introduction of knowledge through to fieldwork and experience of practice. Moreover, thanks to its flexible spatial organization, the center is capable of hosting various types of courses, workshops, and community activities on a regular basis, demonstrating how agricultural education spaces can go beyond seasonal farming activities and turn into regular learning platforms.

Case 4: Haver til Maver Project, Denmark

Haver til Maver (From Garden to Table) is a Danish agricultural learning project which introduces children to agriculture through garden work, cooking, and ecological education activities. This project stresses learning through experience rather than through watching, where people can learn about food production through activities like planting, harvesting, processing, and distributing. Through the use of tangible materials and practical tasks, the project is able to bring the

world of agriculture closer to people's daily lives.

The comparison of these four cases indicates that the core of agricultural educational spaces does not lie in reproducing traditional agricultural landscapes or creating large-scale experience facilities, but in transforming local production resources into meaningful and participatory learning processes [22]. Liuba Bee Museum demonstrates the potential of small rural public buildings to communicate local knowledge; Taishang Strawberry Park shows how fruit industries can be transformed into agricultural experience activities; FarmED provides approaches for year-round operation and integration between indoor and outdoor learning environments; and Haver til Maver highlights the importance of practical participation and sensory learning. Together, these cases provide references for Green Apple Paradise in terms of local resource translation, experiential learning organisation and flexible spatial design strategies.

2.4 Regional and site context

Yangzhai Town is located in Funing County, Yancheng, Jiangsu Province, within the regional context of the former Yellow River course. Its spatial formation is closely related to river evolution, agricultural development and changes in rural settlements. Long-term hydrological changes and sediment deposition have shaped the local agricultural environment, while residents have gradually developed agricultural practices adapted to local conditions through production activities. Place-based design research suggests that local space is not formed by isolated visual symbols, but through the interaction between natural environments, human activities and historical development. Therefore, the regional expression of Green Apple Paradise should focus on the relationship between the former Yellow River

course environment and local agricultural production, and translate this relationship into a place-specific spatial experience.

The most important local resources of Green Apple Paradise are the agricultural environment shaped by the former Yellow River course and the fruit cultivation industry developed in Yangzhai. In recent years, Yangzhai has promoted rural development through ecological improvement, characteristic agriculture and the integration of agriculture, culture and tourism. Fruit cultivation not only creates a visible agricultural landscape, but also contains a complete knowledge system including seedling cultivation, pruning, pollination, fruit thinning, harvesting, grading and processing. These continuous agricultural processes form the foundation of the educational content of Green Apple Paradise. The project does not treat the apple as an isolated visual symbol, but interprets it as the result of the interaction between land conditions, cultivation techniques, seasonal changes and agricultural labour.

From the perspective of place-based design, local resources need to be identified, selected and translated before being integrated into the design process. Research on rural place-based design emphasises that spatial design should respond to the relationships among natural conditions, human activities and historical development, rather than simply reproduce regional images. Based on this principle, Green Apple Paradise identifies the former Yellow River course environment, fruit cultivation system and agricultural knowledge as core resources, while incorporating seasonal changes, farmers' experience and material characteristics to establish connections between local resources and spatial experiences. In this process, the land environment provides the background for agricultural learning, fruit production provides knowledge content, and agricultural practices become experiential activities. As a result, apple-related visual elements

become part of the spatial expression rather than isolated decoration, reflecting the relationships among land, technology, labour and seasonal cycles.

2.5 Existing architectural and landscape conditions

Green Apple Paradise is located in the rural agricultural environment of Yangzhai Town, Funing County, Yancheng, Jiangsu Province. The site includes existing architectural elements, agricultural lands around it, and spaces of activities. Total area of the site is about 1,648 sq. meters and building and outdoor spaces have integrated spatial structure. Existing building is built using a glass central hall and surrounding modular containers, and total first floor area is about 578 sq. meters. Central hall creates relatively open space, and surrounding containers include supportive spaces. Integration with surrounding agricultural planting areas and transportation spaces creates foundation for agricultural experience, learning activities, and improvement of landscape. Current study pays attention to spatial planning, characteristics of existing architecture and environmental factors, while structural safety, fire safety and other technical factors should be studied separately.

There is possibility of adaptive reuse of the existing building owing to its relatively explicit spatial composition. Being the most complete open area in the existing building, the glass hall in the centre has pronounced public qualities and spatial adaptability, making it possible to organise gatherings, communication and other activities in it. Modular containers that surround this hall form enclosed spatial limit. Despite their relatively small size, each of these independent modules may contain certain functions such as conducting experiments, storing items and providing services. Existing architectural composition forms a basis for future

functional optimisation, but there are still some shortcomings that need to be addressed.

The present spatial organization has not yet been able to form a complete agricultural experience chain process. The current functions of the place are concerned only with the aspects of exhibition, visiting and services, but the linkages between the observation, interaction, practice and communication processes have yet to be identified. There is also a problem with the linkage of the interior spaces with the exterior agricultural environment; there are inadequate spaces for congregation, activities, cleaning and seasonal programs. As far as the appearance of the architecture is concerned, there are problems with color contrasts, different windows and openings, exposed equipment and signage plan.

The surrounding landscape provides a connection between Green Apple Paradise and agricultural production, while different areas within the park serve different functions. Green Apple Paradise mainly functions as an agricultural learning and experience space, supporting knowledge introduction, interactive activities and experience sharing. Other greenhouse and orchard areas within the wider site undertake actual cultivation, harvesting and agricultural production. Therefore, the landscape of the site does not need to reproduce a complete orchard environment, but should provide supporting spaces for observation, interaction and agricultural knowledge verification according to educational needs, creating a complementary relationship between architecture and agricultural landscapes. Conditions related to structure, equipment and fire safety require further confirmation based on actual site conditions, providing a basis for subsequent design development.

2.6 Design principles

Based on the previous analysis of experiential learning, user needs, case studies, regional resources and existing site conditions, the design of Green Apple Paradise follows an integrated principle combining environmental adaptation [23], place-based expression, functional organisation, experiential learning and long-term operation [24]. The design first responds to the climatic conditions and agricultural environment of Yangzhai. While respecting the existing modular structure, spatial performance is improved through strategies such as daylight optimisation, natural ventilation, shading and rain protection. The choice of materials stresses authenticity, traceability and minimal maintenance in order to create an environment of a "modern agricultural laboratory with a warm land feel". The predominant visual language of the project will consist of natural colors, including sandy colors, warm white-grey, wood and bark textures, supplemented by color accents for increased spatial identity.

While the design does not see the apple shape as the sole representative of the local identity, its emphasis lies in the interactions between the land, production, and labour [25]. These aspects are translated into experiences of space through the design. The design takes up the “growth line” as the key narrative of the project and sediment layers of the former Yellow River course, orchards, roots and branches, and authentic agricultural tools as secondary narratives. Local culture, therefore, is depicted as a constantly working agricultural process [26] instead of a mere image. In terms of functionality, the organization of the space is made possible through educational processes and operational needs. The central hall becomes an open educational core, and the surrounding modular spaces become experimental, exhibition, processing, and support spaces.

This design also highlights the continuity between architectural space and the agrarian environment. Rather than replicating the agrarian landscape into the

building itself, the design links the spaces inside the building to the real cultivation sites on the site, using outdoor spaces as spaces for observing and verifying agriculture. The whole learning process is based on the order of " Experience-Reflection-Understanding-Practice ", which takes people from observation and interaction to the understanding of agricultural knowledge. In addition, the integration of experiments, exhibits, workshops and seasonal agricultural activities increases the flexibility of the space all year round.

Furthermore, the design takes into account issues like safety for children, accessibility and maintenance issues, which involve proper scale, visual control, rounded edges, non-slippery floors, easily cleaned materials, and circulation. Overall, strategies used focus on curriculum-based design, open sharing, separation of wet and dry, separation of active and passive, renewal and intervention with minimal effort. Through such principles, Green Apple Paradise will become an educational environment where architecture, landscaping and agriculture will come together in an existing rural setting.

Conclusions to the second chapter

1.Through the analysis of educational activities and needs of the users, it has been identified that Green Apple Paradise will act as an education experience center for agriculture instead of being just a tourist destination or fruit picking farm. Spatial organization should allow for the learning process of introduction, observation, practice, communication, and reflection.

2.From the study of experiential learning and spatial organization, it has become clear that agricultural knowledge can be converted into educational experience by means of observation, material interaction, and practice of activity. Experience,

reflection, understanding, and practice constitute a framework for spatial organization.

3.Several significant strategies have been found through comparative studies of both domestic and international examples for rural educational environments, which include resource integration, relationship of interior and exterior space, flexibility of spatial organisation, participatory experience and operational adaptability.

4.Site and regional analysis has proven that the Yellow River track, sandy soil, fruit farming and agriculture production are key resources of Yangzhai. The resources are the foundation of transforming local identity into spatial experience instead of mere decorative representation.

5.According to the analysis of current architectural conditions and design approaches, the renovation of Green Apple Paradise shall adopt the strategy of adaptive reuse of existing buildings, functional optimization, participatory learning and sustainable operation.

CHAPTER 3. SEARCH AND JUSTIFICATION OF THE DESIGN SOLUTION FOR GREEN APPLE PARADISE

3.1 Essence and main components of the project concept

The idea of "Fruit from the Ancient Riverbed: From Land Knowledge to Agricultural Practice" derives its existence from the distinctive way of creation of Yangzhai and not from any symbolic reproduction of images associated with the apples. In terms of the sandy soils and the sedimentation of the landscape of the Yellow River Ancient Course, the project sees the orchard as an interactive system involving the interaction of land, growth, and agriculture. This story starts with the ancient riverbed landscape, continues in the development of the apple trees and includes agricultural practices such as cultivation, management, harvest, and processing [27].

Further translating the idea, it becomes the theme for the "line of growth" design, connecting the first floor, stairs, second floor and courtyard in a single story line as follows: sand grains → sediment layers → roots & branches → orchards rows → fruit picking. The spatial narrative leads to understanding the land, and its agricultural use, bringing together courses, space, materials, façade and landscape. In contrast with typical orchard design themes, this one does not use obvious symbols like huge apples or cartoons. It uses the unique spatial language of Yangzhai's particular connection of ancient river sediments, sandy land and process of growing apples.

3.2 Functional and spatial solution

Under the framework of the learning process of "agricultural understanding – practical experience – knowledge transformation", the project constructs a spatial structure that combines "central experience hall + surrounding functional modules + second-floor learning space + outdoor educational landscape". The total building space is around 974 m^2, which includes 578 m^2 at the first floor level and 396 m^2 at the second floor level. On the first floor, the design is centered on a central hall of around 240 m^2, using an open zoning system and a curved exhibition interface system to address the entrance guidance, previous river route and soil knowledge, fruit tree and fruit observation, digital orchard study, agricultural practices, and reading exchanges. In terms of function, the left side is focused on practices, the central area is dedicated to the digital explanations, and the right side is used for observation and knowledge understanding. On the other hand, fixed functions such as operation office, teaching material storing, fruit processing, toilets, preparation room, storage and product display are placed in the surrounding modules.

The first level is arranged according to the "introduction-cognition-observation-practice-communication" process for agricultural learning. The middle area is the primary learning area, while the entrance guide area is located near the entrance area. The right side forms a path for cognition and observation including topics like old riverbed interpretation, soil observation, agricultural tool cognition, fruit tree observation, growth models, and fruit cognition.The digital orchard area is located in the centre, while the agricultural practice area is arranged on the left side, with a reading and communication area providing a relatively quiet learning space. The surrounding modular units and supporting spaces, with an area of approximately 338 m^2, accommodate operational offices, teaching materials, processing experiences, sanitation facilities, staff rest areas, preparation spaces and

storage. Additional functions such as themed landscapes, leisure cafés, cultural product displays and agricultural product sales are connected with the central learning space and outdoor areas, forming a first-floor system integrating observation, digital interpretation, hands-on practice, processing experience and knowledge sharing.

The second floor, with an area of approximately 396 m^2, functions as a space for knowledge transformation and further extension of the agricultural experience process. The central void is maintained to preserve natural lighting, spatial recognition and visual connections between different floors. Learning outcome displays, reading areas and educational installations are arranged along the inner side, allowing visitors to review and reflect on the first-floor experiences. Relatively independent rooms accommodate a seedling laboratory, digital planting experience room, educational classroom and discussion room, supporting plant cultivation, digital interaction, group teaching and collaborative discussion. The terraces are designed to be located on both sides above the entry plaza, integrated with cultural product exhibitions and viewing spots for recreational purposes. In such an organization, the ground floor would be devoted to agricultural knowledge and experience, whereas the second floor would aid in the interpretation and presentation of results.

Outdoors act as an extension of indoors for agriculture studies, offering areas where observations and hands-on activities can take place in the larger context of agriculture. Instead of offering the full experience of being at an orchard, the outdoors are organized to include small educational scenes that focus on entrance gathering, outdoor education, family activities, nature exploration, seasonal planting, fruit tree observation, and experiences of sharing. Areas where entrance gathering, course introduction, and activities organization take place include the

entrance plaza. Outdoors classes, family activities areas, and nature explorations offer venues for group learning, family participation, and nature observation. Seasonal planting and fruit tree observation illustrate plant development and change throughout the seasons, while outdoor tasting and sharing facilities help in product tasting and learning.Through the connection between indoor and outdoor spaces, the project forms a complete agricultural learning process from knowledge introduction and observation to practical activities and experience sharing.

3.3 Circulation and educational scenario

The circulation organisation of Green Apple Paradise is based on experiential learning theory and responds to the site scale, functional distribution and operational mode [28]. Unlike a one-way visiting route mainly focused on sightseeing, the project integrates concrete experience, reflective observation, abstract conceptualisation, active experimentation and outcome feedback into a continuous learning process. The complete educational journey begins with outdoor gathering and course introduction. Participants first enter the first floor to observe and understand local agricultural knowledge, then move to the second floor for recording, discussion and knowledge organisation. They return to the first floor for agricultural practice and fruit processing, and finally complete the learning experience through outdoor observation, agricultural product tasting and outcome sharing. Through the continuous connection of indoor and outdoor spaces, participants gradually understand the relationships among the former Yellow River course environment, sandy soil, fruit tree growth, agricultural management and fruit processing.

Participants first gather at the entrance plaza for group organisation, activity

introduction and course briefing before entering the first-floor introduction area. On the right side, the former river course interpretation area, soil observation area, agricultural tool display, fruit tree observation area, growth model area and fruit cognition area together form an observation and knowledge zone, helping participants establish an initial understanding of local environmental conditions and fruit production. The digital orchard area provides agricultural information display, short explanations and circulation connections. After entering the second floor, participants can conduct observation records, discussions and knowledge learning in the seedling laboratory, digital planting experience room, educational classroom, discussion room and reading area. After finishing the second-floor learning exercises, the participants go back to the first-floor area where there is farming practice and processing so that they can utilize their learning by engaging in practical exercises as well as fruit-related experiences. The third stage will include the presentation of learning outcomes and outdoor exercise on fruit trees and agriculture products tasting. In all these processes, the center hall plays a major role of connection and activity transformation.

This project uses the reservation system, as well as small group teaching, where each class will cater to about 10-20 people per group, but the number may be increased depending on the topic and available space.Different groups can use observation areas, second-floor learning spaces, agricultural practice areas and processing areas at different times, controlling the number of users in each zone, reducing congestion and ensuring effective observation, discussion and practical activities. Teachers or group leaders mainly undertake course guidance, safety management and material preparation, maintaining convenient connections with the entrance plaza, teaching material room, central hall and second-floor learning spaces. Families and general visitors can select shorter visiting routes according to their available time, mainly using the entrance area, observation spaces, digital

orchard area, fruit tree observation garden, processing experience area and tasting and display spaces.

Operational staff mainly access the operation office, teaching material room, processing area, cleaning room, preparation room, storage and display spaces through the surrounding modules and service circulation routes, reducing interference between logistics activities and educational experiences. Supporting functions such as material preparation, storage, handwashing, tool organisation and cleaning services are arranged in relation to the main activity routes. Seasonal plantings, fruit tree observation garden, outdoor classroom, family activity zones and nature discovery zones allow indoor education to be extended out to agricultural sites, and tasting and sharing zones facilitate the summation and exhibition of the classes. By the means of integration of educational circulation system, visitor circulation system and service circulation system, this project provides a flexible space structure that is appropriate for small group tours, family visits and everyday use.

3.4 Interior environment design

The spatial experience of Green Apple Paradise is oriented at making agricultural knowledge a tangible experience rather than designing a thematic space. It is implemented through the introduction of the concept of the "modern agricultural laboratory with warm land texture", where real agricultural materials, objects and samples are utilized as a medium of spatial experience. The entrance zone tells the story of the region through the transition from soil particles to growth lines, while the main hall acts as an adaptive space for holding lectures, experiments, exhibitions and discussion meetings through adaptive furniture and layout. It is

because of the belief that spatial experience must be built through perception, material and storytelling [29].

The interior planning is in accordance with the agricultural learning process, which includes soil, growth, management, processing, and reflection. Various spaces within the program cater to different sensory and experiential needs; laboratories dealing with soils emphasize the sense of touch and observation, growth spaces include plant specimens as well as changes throughout seasons, processing zones enable weighing, sorting, and light production tasks, and creative studios encourage individual expression [30]. Lighting, materials, and colors are employed to emphasize the atmosphere and cognition, with the subdued color palette including sand beige, warm white-grey, wooden tones, and green accents only. The literature on experiential interior design reveals that light, materials, colors, and spatial circulation can create a narrative language that supports users' perception and experience [31].

Performance and operation demands are part of the design process. The wet zones use easily cleaned finishes and controlled lighting whereas the center zone utilizes sound-absorbing treatments and partitions that adapt to different needs. User-friendly features such as soft corners, anti-slip finishes, clear way-finding systems, and accessibility and safety management considerations are included for successful operation over time. The interplay of sensual experience, educational purpose, and functionality results in an ongoing learning space which bridges the local agricultural setting with users' lived experience.

3.5 Architectural interface and landscape environment

The entire architecture of Green Apple Paradise has been positioned as a modern

structure meant for agriculture education and has modular features. The ground level consists of container-like volumes aligned horizontally in relation to the central hall while the new second level has been created around the central void and made lightweight with setbacks and terraces from both sides. The two levels have the same structural and material order and thus give continuity to the fragmented volumes into a single architectural entity. The entire structure has simple geometrical proportions and clear horizontal layers and transparency between interior and exterior spaces. With all these features it has avoided imitating the traditional rural structures and apple forms.

Façade color palette consists of warm white-grey and sandy beige colors, with dark grey metal profiles emphasizing borders of modular units. Natural properties are introduced through wood-textured aluminium louvers and perforated metal screens that provide shading, ventilation and equipment screening opportunities. Vertical divisions of façade are based on the idea of orchards' regular row structure. Second level façade is designed using more glass and lighter shading components, thus making a distinction between solid and transparent volumes. Main entrance is improved through the use of lightweight canopy, entrance frame and continuous eaves, improving its visibility and creating better transition. "Growth line" concept is expressed in entrance design, louver design variations and guidance interfaces, thus providing coherence between the architectural and interior appearance. Exterior materials are chosen for their ability to withstand weather effects, corrosion and ease of maintenance considering humid climate of Yancheng.

In the landscape design, a small-scale and low-intervention approach is taken for renewal while retaining the openness of the site [32]. Processes such as plant growth, soil change and water become visible educational materials. The "growth line" evolves into a curved path linking the entrance, planting observation spots

and outdoor activity nodes. The layers of soil and rows in orchard become paving divisions, planting zones and layout of landscape facilities. The ground materials consist of permeable sandy paving, fine gravel and durable wood, with infiltration zones and planting beds enhancing rainwater infiltration. Plants chosen are those that can survive locally, seasonal plants and miniature fruit trees which are easy to cultivate. This represents the passing of agricultural time by sowing, growing, blooming, bearing fruit and cultivating. Fruit tree information sign, soil observation system, outdoor classroom and educational sharing facilities transform the natural process into teaching tools enabling the landscape to become a continuing educational setting along with indoor agriculture knowledge, practices and outcome sharing.

3.6 Place-based material and cultural translation

The design of Green Apple Paradise based on the site has its foundation rooted in the natural conditions and agriculture production in Yangzhai. Instead of simply imitating the shape of apples and the elements related to rural settings, the design explores the relationship between the former Yellow River course, the sandy soil conditions, and the production of fruits. The "growth line" motif is created through an abstraction of the former flowing lines of Yellow River course, fruit tree root system and branch growth pattern, which is used in the curved interfaces on the ground floor, the floor guiding, lighting strip on the ceiling, staircase handrails, the border line of the void space on the second floor and outdoor walking paths. The content of each area covers the knowledge of the former river environment, soil condition, fruit tree growth process, agricultural activities and results sharing. Rows of orchards and soil sediment layer become the other supporting design languages, transferred to the design of exhibition layout, building grid, lighting

rhythm and wall layering.

The material translation process focuses on the connection between local environmental meaning and spatial function. Not only does the yellow sandy soil of the former Yellow River be used as color reference, but soil sample boxes, transparent sediment profiles, tactile particle installation and permeability comparison experiment have been done in order to explain the soil structure, layer and ecology. The interior wall uses sandy minerals as coating materials and fine grain as finish to interpret the soil texture that is long-lasting and easy to maintain. Real branches, root replicas, grafting samples, fruit sorting machines and agricultural machines are integrated into the observing and practicing facility in order to turn the knowledge about agricultural production into spatial experience. Wooden and bark texture has been mainly used for working surface, display cases and resting area, while the dark grey metallic elements preserve the characteristic of the former container architecture. The material selection also takes into consideration the humid environment of Yancheng, maintenance requirement of public space and child safety requirements.

The expression of local culture is further integrated into the growth cycle of fruit trees and agricultural production processes. Activities and knowledge related to seedling cultivation, flowering, pollination, fruit thinning, bagging, harvesting, grading and processing are presented through replaceable samples, diagrams, digital displays and practical tasks in the seedling laboratory, digital planting experience room, agricultural practice area and processing experience area. These elements allow participants to understand the environmental conditions and production knowledge behind Yangzhai's fruit industry. Based on place-based evaluation perspectives, the design is examined through four aspects: land environment, local resources, site conditions and local identity. These aspects

consider whether the space responds to the former Yellow River course and sandy soil environment, whether authentic agricultural resources are incorporated, whether the design adapts to the existing building and small-group learning needs, and whether it reflects the local value of Yangzhai's apple industry. Therefore, place-based expression is not only a visual style, but also a design approach that organises space, materials and educational activities.

3.7 Seasonal educational activities

The educational activities of Green Apple Paradise are organised around the growth cycle of fruit trees and agricultural production processes, allowing the learning programme to extend beyond the autumn harvest season. Courses are organised through a reservation-based and small-group model. According to seasonal changes, authentic samples, digital information and practical tasks are combined to transform local agricultural resources into learning content that can be observed, understood and applied [33]. Each activity is designed with clear learning objectives, operational processes and outcome feedback, ensuring that the space can maintain stable educational use throughout the year.

Winter activities mainly utilise the agricultural tool recognition area, fruit tree observation area and agricultural practice area on the first floor. Through branch structure observation, pruning demonstrations and simulated tool use, participants learn about fruit tree management during the dormant period. Spring activities focus on the soil observation area, seedling laboratory and fruit tree observation garden, incorporating soil permeability experiments, seedling observation, grafting knowledge and planting records. Summer activities centre on flowering, pollination, fruit development, water and fertiliser management, fruit thinning and

bagging. These topics are explored through growth models, digital planting experiences and outdoor fruit tree observation. Autumn activities mainly use the fruit cognition area, processing experience area and agricultural product display area to conduct maturity assessment, weighing and grading, sugar content testing, simple processing and tasting evaluation. Learning outcomes are further presented through the educational exhibition area and sharing platform [34].

Different spaces jointly support the continuous operation of seasonal courses [35]. The first floor focuses on authentic sample observation, agricultural practice and fruit processing, while the second floor supports digital simulation, knowledge interpretation, discussion, recording and outcome organisation [36]. Outdoor seasonal planting areas and fruit tree observation gardens provide opportunities to verify real plant changes. Digital orchard content and replaceable exhibitions can be updated according to different growth stages of fruit trees, compensating for limitations in outdoor space and seasonal conditions. Real fruit picking can be introduced as an additional autumn activity, but it is not a necessary component of the complete educational programme. In this way, the project can achieve year-round agricultural education even without relying on large-scale orchard experiences.

3.8 Technical support and feasibility

The technical strategy of the project is based on coordinating the renovation of the existing first-floor spaces with the addition of a new second-floor structure. Before implementation, the existing first-floor structure, foundations, component connections and additional loads should be assessed. The approximately 396 m^2 second floor is recommended to adopt an independent lightweight steel structure,

allowing the main loads to be transferred to newly added or reinforced foundations and reducing the impact on the existing container modules. The new structure should integrate the central void, staircase and terraces through a unified support, connection and lateral resistance system. The building envelope should also address issues including thermal bridging of steel structures, insulation, waterproofing and condensation control. The roof, terraces and entrance canopy should form a complete drainage system to adapt to the humid and rainy climate conditions of Yancheng.

The building service systems are organised according to the functional requirements of different spaces. The processing area, toilets, cleaning rooms and service preparation spaces are relatively concentrated to shorten water supply and drainage routes and facilitate maintenance. The processing area should clearly organise the relationships among material storage, operation, cleaning and waste disposal, while incorporating slip-resistant flooring, drainage systems, ventilation and easy-to-clean surfaces. The seedling laboratory and digital planting experience room should reserve conditions for water supply, electricity, network connections and equipment maintenance. Digital displays and educational devices should be arranged according to lighting control, socket locations and heat dissipation requirements. Air-conditioning units, pipelines and equipment facilities are integrated through louvers and maintenance interfaces to minimise visual impact on the main façade and educational spaces.

Safety design should be further verified according to current regulations, including fire compartmentation, evacuation distances, staircase dimensions, number of exits, fire resistance performance of building components and material fire ratings. The relationship between fire protection and smoke control across different floors should also be considered in relation to the central void. The floor for the main

circulation zone should be slip-proof, whereas furniture, exhibition platforms, and operational equipment should have smooth corners. Proper storage places should be arranged for tools and other equipment used. Besides stairs, there should be barrier-free vertical transportation on the second floor at the detailing phase. Otherwise, the first floor needs to have all the features of a comprehensive core educational area on its own. There should be several stages of implementation, which involve renovations and constructions of structure, envelope and MEP systems along with interior finishing, and landscaping and installation of educational equipment. With the help of professional analysis of the structure, fire safety, equipment systems, hygiene and operation, the design concept can be further elaborated to become implementable.

Conclusions to the third chapter

1.Design proposal created an idea of "Fruit from the Ancient Riverbed: From Land Knowledge to Agricultural Practice", forming the link between the former course of the Yellow River, sandy soil, growing of fruits and agriculture into a spatial story.

2.Functional and spatial concept included the central experience hall, surrounding functional zones, learning zone on the second floor and educational landscape outdoors. Using the organization of cognition, practice, interpretation and communication areas, the project creates an integrated agricultural learning environment.

3.Circulation and educational scenarios united the indoor and outdoor spaces by the processes of experiential learning. Educational route for visitors, general one for guests and service personnel were organized to create spatial effectiveness and

flexible operation all over the year.

4.Interior, architectural and landscape design transformed the local resources into the spatial elements through growth lines, soil layers, orchards, materials and displays of the agricultural knowledge. Design does not use rural symbolism and creates the local identity through the processes of the environment and learning.

5.Year-round operation became more feasible thanks to the seasonal activity and technical systems. With the use of real agricultural materials, digital interpretation, practical activities, and reuse strategies, Green Apple Paradise is created as an educational space in the countryside, where architecture, landscape, and agriculture come together.

CONCLUSIONS

1. The review of theoretical sources clarified the relationship among educational excursions, experiential learning, agritourism and rural learning environments. The analysis demonstrated that an educational excursion should be organised around defined learning objectives, guided participation, practical tasks and identifiable learning outcomes. It was therefore established that rural educational space should function as part of the learning process rather than merely as a setting for tourism activities.

2. The analysis of experiential and place-based learning theories confirmed that local environmental conditions, agricultural production and cultural knowledge can be transformed into educational content through direct observation, interpretation and practical participation. The results established a theoretical sequence of cognition, experience, practice and reflection as the basis for spatial organisation.

3. The comparative analysis of domestic and international analogues identified five principal requirements for rural agricultural educational environments: adaptation to local conditions, integration of indoor and outdoor learning, organisation of continuous experiential processes, separation of visitor and service circulation, and support for long-term operation. The comparison also showed that local identity is more effectively expressed through production processes, materials and spatial relationships than through the decorative reproduction of rural symbols.

4. The regional and site analysis confirmed that the sandy soil of the former Yellow River course, fruit-tree cultivation, seasonal agricultural activities and local production knowledge constitute the principal place-based resources of the project. Based on these findings, the “growth line” was established as the main design method for translating the sequence of soil cognition, plant growth, agricultural management, product processing and learning reflection into a coherent spatial and

educational narrative.

5. The functional and spatial analysis demonstrated that agricultural cognition, practical participation, knowledge interpretation, discussion, exhibition and outdoor observation can be integrated into a continuous learning system. The results confirmed that the coordination of indoor and outdoor spaces can support the complete educational process while avoiding the fragmentation of teaching, experience and landscape activities.

6. The circulation and operational analysis established differentiated routes for educational groups, general visitors and service staff. The results showed that the separation and controlled intersection of these routes can improve spatial clarity, operational efficiency and user safety. Reservation-based activities for groups of approximately 10 – 20 participants, together with digital interpretation, sample observation and seasonal courses, were identified as appropriate methods for reducing dependence on the harvest season and supporting year-round use.

7. Design assessment revealed that place expression could indeed be created using a combination of material, color, architectural interface, and landscape composition. Translating the layering of soil, the rows of orchards and growth of plants into spatial form, façade pattern, guide lines, and landscape sequence gave rise to a consistent language of design without directly copying the shapes of apples or rural imagery.

8. The technical feasibility analysis revealed that the combination of a light-touch approach to intervention, long-lasting finishes, maintainable buildings, and safe movement paths form a sound foundation on which the development of the proposal can be based. But the structure's capacity, fire resistance, mechanical and electrical services, accessibility, construction details, and educational performance after occupancy must be verified by experts.

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APPENDIX A (Tables and Diagrams)

Rural educational tourism is shifting from seasonal sightseeing towards structured learning and practical participation. However, many agricultural attractions still depend on picking activities and decorative rural imagery, with limited educational content and weak connections between indoor and outdoor spaces.

Green Apple Paradise is rooted in the agricultural environment of the former Yellow River course and the apple-growing industry of Yangzhai Town. This project transforms local soil, fruit cultivation and production knowledge into a year-round learning environment through place-based design, experiential learning and integrated architectural–landscape renovation.



Figure 1. Research Background

Year	Policy document	Issuing authority	Key points	Relevance to this research
2016	Opinions on Promoting Study Travel for Primary and Secondary School Students	Ministry of Education and 10 other departments	Defines study travel as a school-organized off-campus activity combining research-based learning and travel experience; calls for study-travel bases, curriculum integration, funding support, and safety mechanisms.	Provides the educational policy basis for transforming rural sites into structured educational-excursion environments.
2018	Opinions on Implementing the Rural Revitalization Strategy	CPC Central Committee and State Council	Treats rural revitalization as a national strategy; promotes integrated development of agriculture, culture and tourism, and improvement of rural living environments and public services.	Supports the broader context for integrating education, agriculture and rural space design.
2018	Strategic Plan for Rural Revitalization (2018–2022)	CPC Central Committee and State Council	Establishes a five-year policy framework; emphasizes infrastructure, public services, ecological protection, industrial development, and rural cultural revitalization.	Supports the systematic improvement of rural facilities and multifunctional public spaces.
2018	Guidelines on Promoting the Sustainable Development of Rural Tourism	Ministry of Culture and Tourism, National Development and Reform Commission, and 15 other departments	Improves rural tourism quality through planning, infrastructure, environmental improvement, and product innovation; encourages integration with agriculture, education, science, and culture.	Directly supports transforming agricultural resources from sightseeing products into educational experiences.
2021	Rural Revitalization Promotion Law of the People's Republic of China	Standing Committee of the National People's Congress	Provides legal support for industrial, talent, cultural, ecological, and organizational revitalization; promotes integrated rural development and rural public services.	Gives legal and institutional support for the long-term development of rural educational environments.
2022	The 14th Five-Year Plan for Tourism Development	State Council	Calls for improving the quality of rural tourism, strengthening cultural-tourism integration, upgrading services, and diversifying tourism products.	Supports year-round operation, service improvement, and diversified use of rural experiential spaces.

Table 1. Relevant policies

“Liuba Bee Museum”	“Taishang Strawberry Park, Xuzhou”	“FarmED Agricultural Education Centre, UK”	“Haver til Maver, Denmark”
			
A tiny rural building integrating beekeeping exhibits, interactions and ecological agricultural education.	Fruit-based agritourism integrating strawberry picking, cultivation learning and seasonal agricultural education.	Year-round farm centre linking indoor classrooms with outdoor fields for sustainable farming practical courses.	Kids’ agricultural project letting children learn food production via planting, cooking and hands-on sensory activities.

Figure 2. Case Studies

- **Chronological Boundaries**

This research focuses on the contemporary period, especially from 2024 to the present, when rural revitalization, cultural tourism, and educational tourism have developed rapidly in China.

- **Geographical Boundaries**

The study is centered on Green Apple Paradise in Yangzhai Town, Funing County, Yancheng, Jiangsu Province, China. Selected Chinese and international cases are used for comparison.

- **Why This Site Matters**

Green Apple Paradise has strong agricultural resources and ecological potential, but its current space still lacks coherent local cultural expression and systematic educational design.

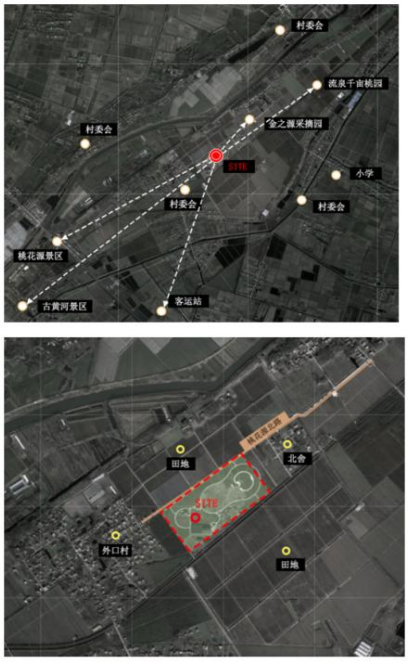
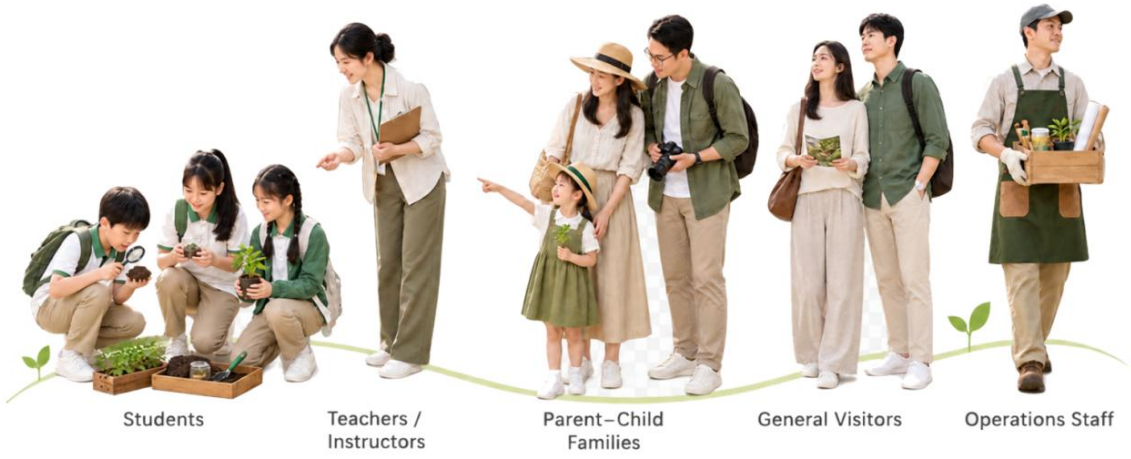


Figure 3. Site Analysis



The project serves five user groups, with students and instructors as the primary educational users. Parent–child families and general visitors follow flexible experience routes, while operations staff support teaching, processing, maintenance, and daily management.

Figure 4. Audience Analysis

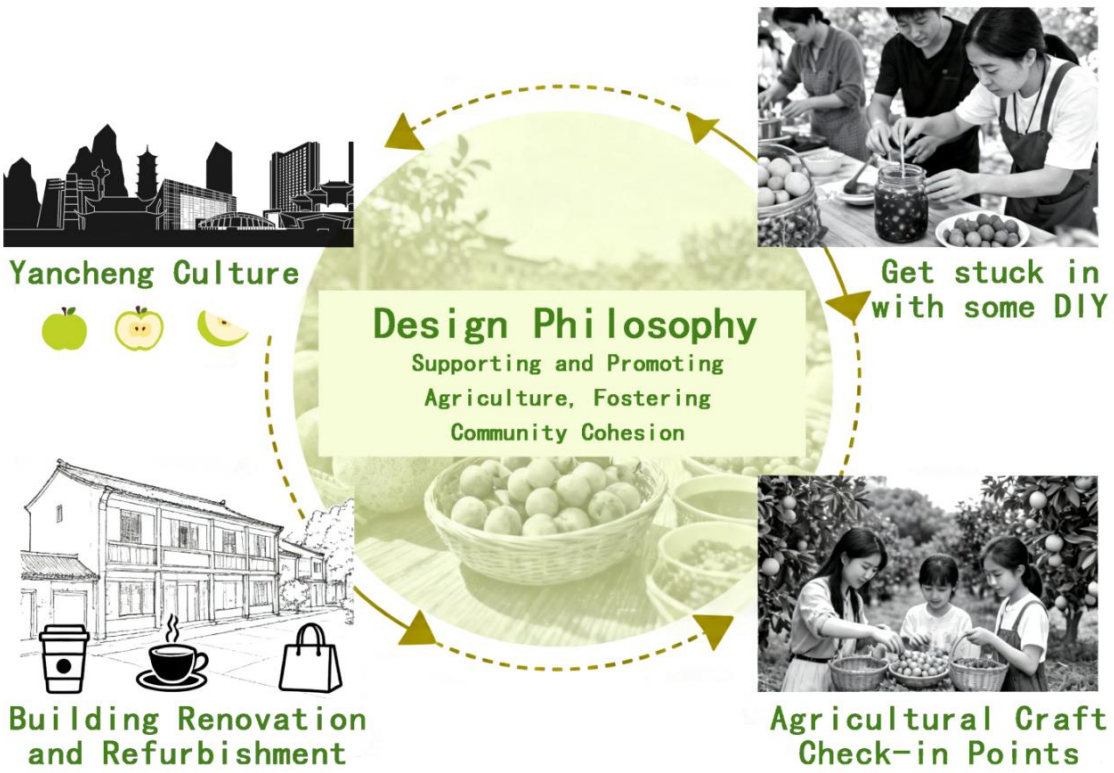


Figure 5. Design Principles

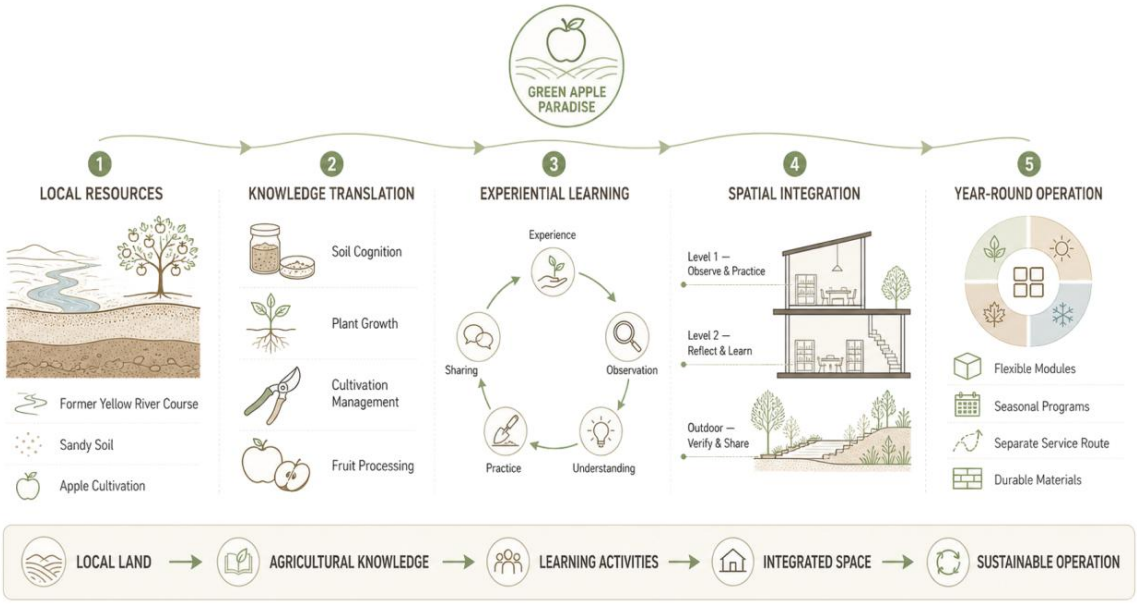


Figure 6. Design Strategy

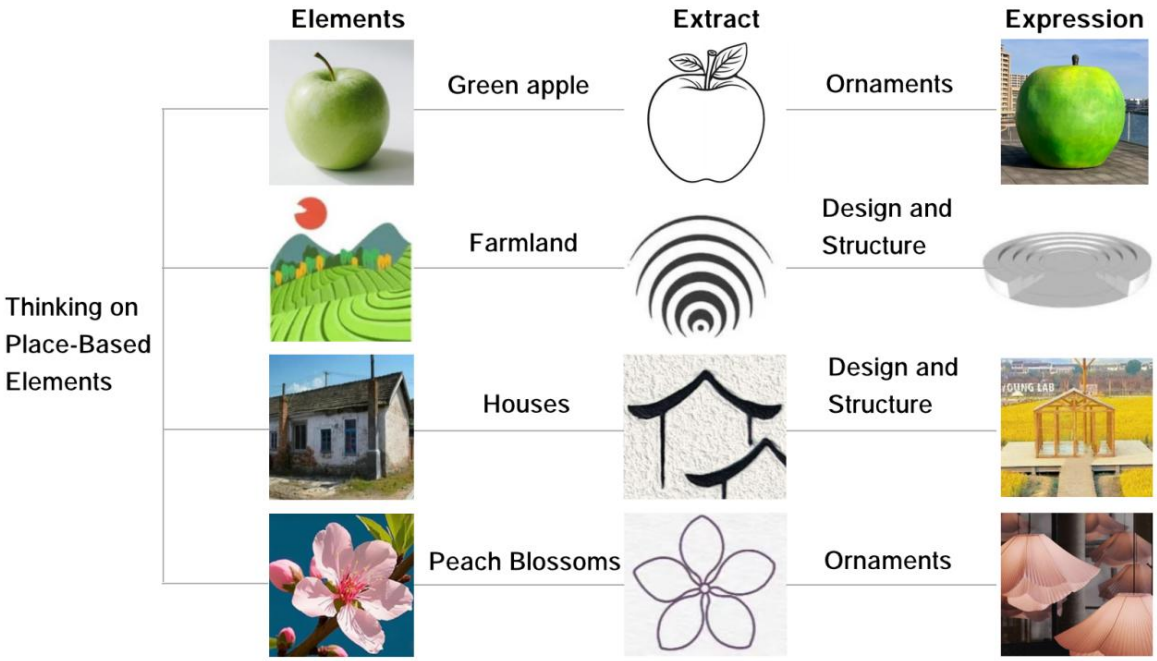
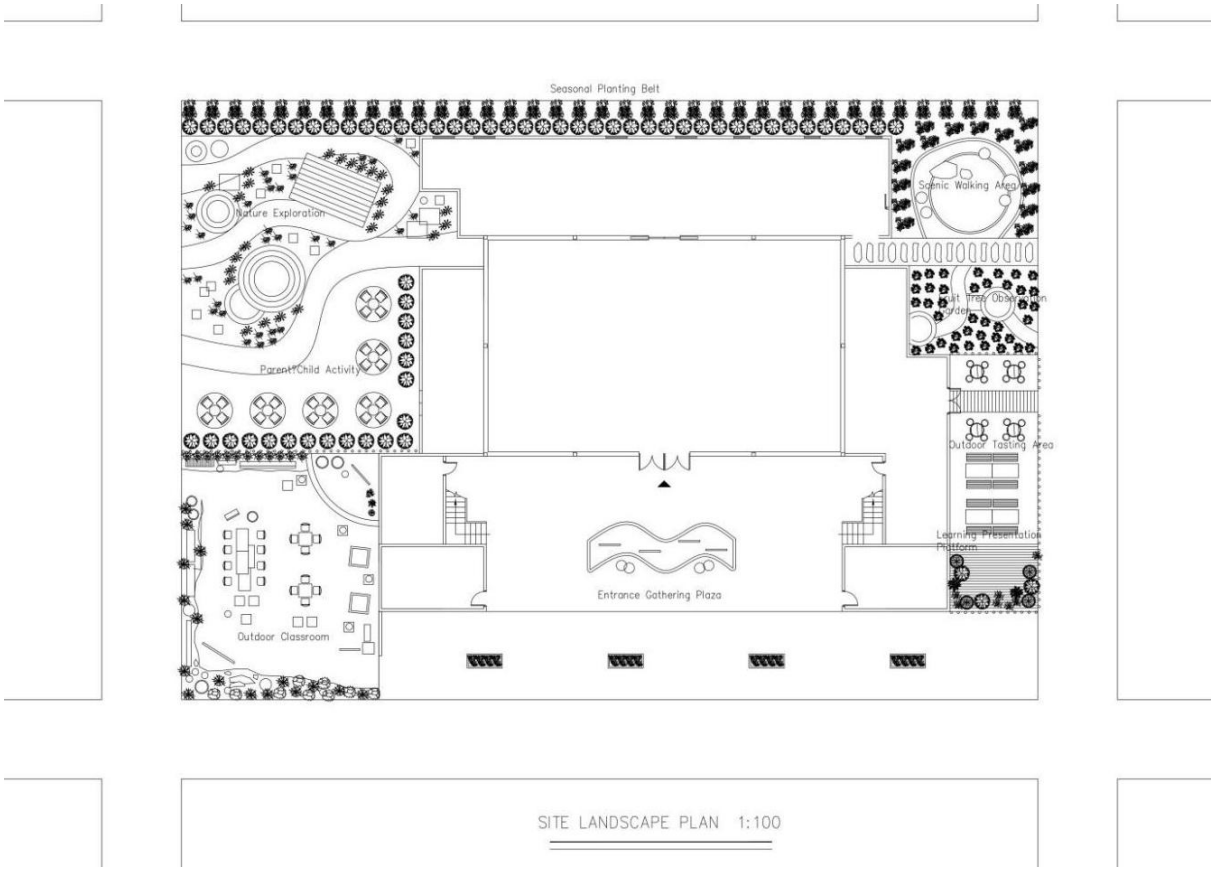


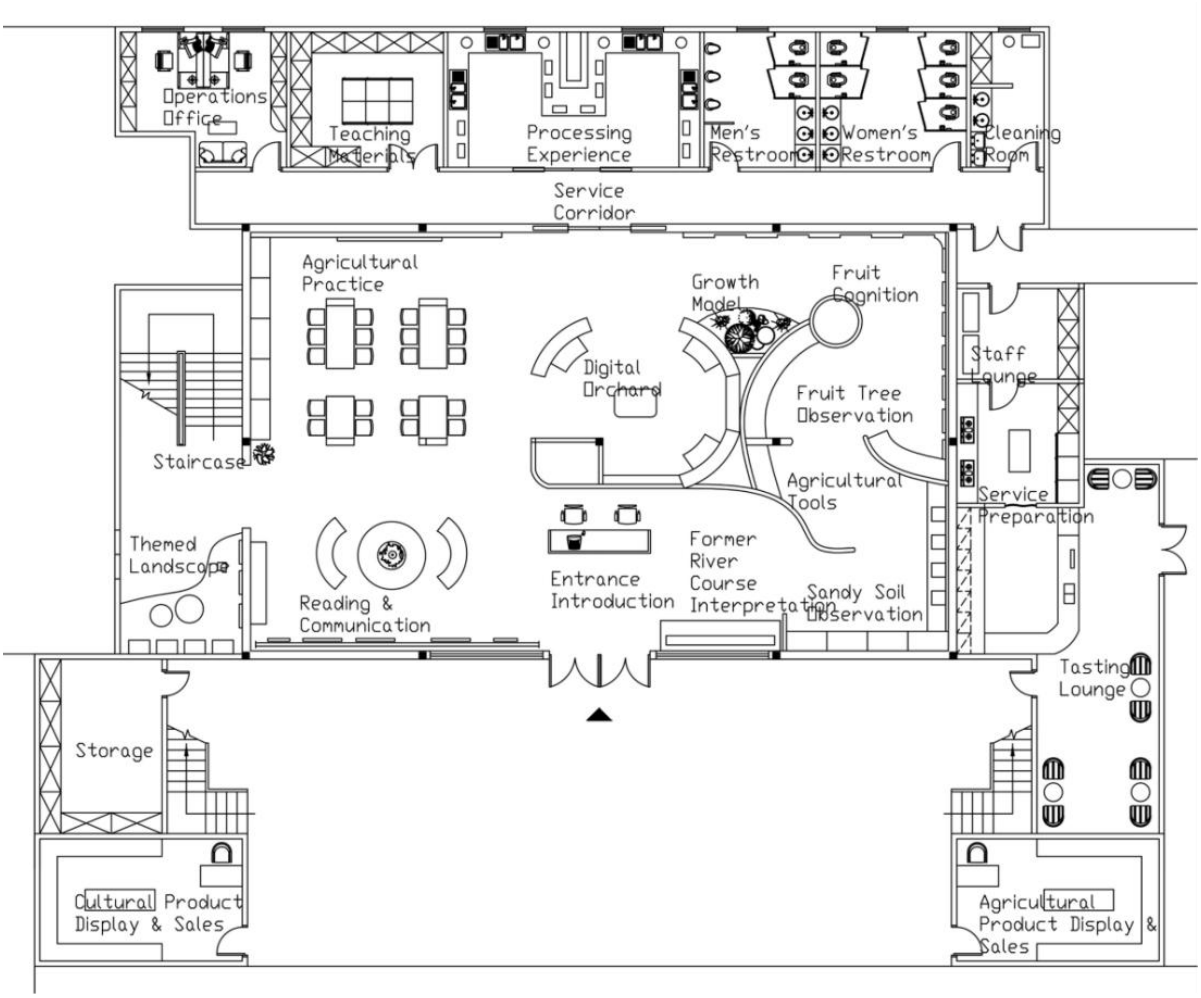
Figure 7. Analysis of Local Elements

APPENDIX B (Floor Plans)



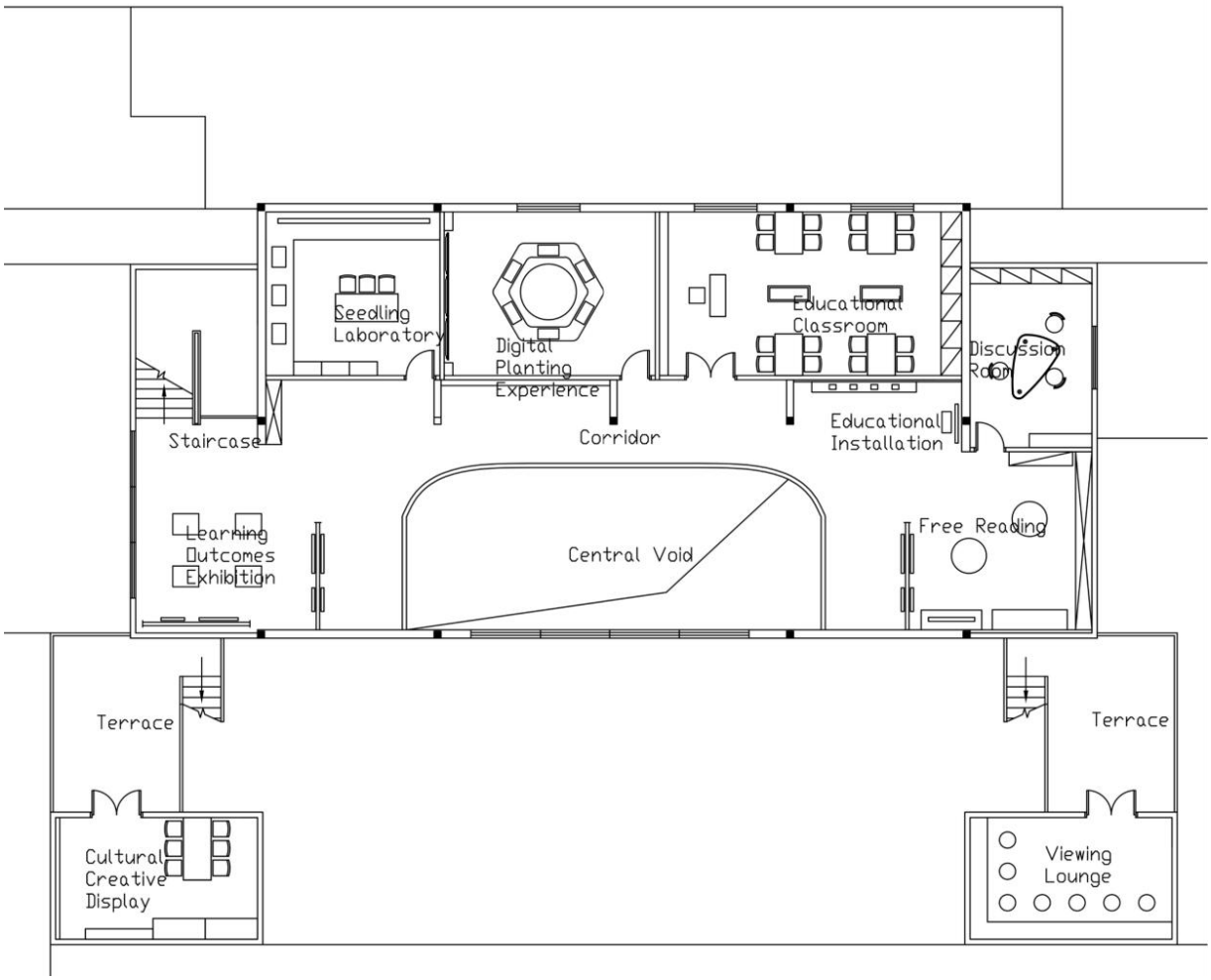
Outdoor landscape expands learning in agriculture by collecting, planting seasons, exploring nature, observing fruit trees, outdoor teaching, tasting, and sharing.

Figure 8. Landscape Site Plan



The first floor concentrates on agricultural knowledge and experience. The core educational area links up the introduction of the entrance to the old course of the river, sandy soil, agricultural implements, development of fruit trees, virtual orchard, and agriculture practice, resulting in a progression from the local knowledge to practice. Processing, instructional materials, office, sanitation, storage, taste testing, and product display facilities surround the core area.

Figure 9. First-Floor Floor Plan



Reflection, acquisition of knowledge, and exchange of learning are emphasized at the second floor level. The seedling laboratory, digital planting experience room, class, and discussion room facilitate observations and education. The central void continues to provide a view of the learning center at the first floor, while the exhibition space, reading nook, cultural-creative exhibition space, viewing nook, and terraces offer presentation and relaxation spaces.

Figure 10. Second-Floor Floor Plan

APPENDIX C (Renderings)





Entrance Introduction Space

Function: The entrance zone is where the first learning begins by providing the connection between the previous course of Yellow River, the sandy soil and agricultural practices.

Description of the Design: The area employs local materials, agriculture and visua l information presentation in order to set up the learning journey from “land recogn ition” to “agricultural exploration.”





Central Experience Hall

Function: The central hall acts as a versatile learning area that incorporates both ag riculture exhibits and communications.

Design Description: There is a growth line that connects various learning subjects, such as observation of the soil, recognition of fruits, and use of agricultural tools as well as virtual orchards. The use of mobile furniture helps the space accommodate various activities, such as exhibitions.





Sandy Soil Observation Area

Function: The space provides an interactive environment for understanding soil characteristics and agricultural conditions.

Design Description: From the samples of soils to the exhibits of materials as well as experiment-based activities, visitors can understand how the characteristics of the land affect the growing of fruits.



Fruit Tree Observation and Growth Model Area

Function: This area introduces the biological process of apple growth through observation models, plants and interactive displays.

Design Description: The design changes the way that apple trees grow naturally into something that is educational for space. This allows visitors to learn about seasons, plant life, and agriculture.



Digital Orchard and Learning Display Area

Function: The digital orchard provides additional interpretation of agricultural information and seasonal changes.

Design Description: Digital media is combined with physical planting elements to create a connection between traditional agricultural knowledge and contemporary educational methods.



Agricultural Practice Space

Function: The agricultural practice area supports hands-on activities including planting experiments, agricultural workshops and practical learning.

Design Description: The adaptable table configuration supports a range of activity scales. The room links theoretical agricultural information with its practical application by translating conventional agricultural processes into learning sessions.



Second-floor Learning and Exhibition Space

Function: The second-floor space provides areas for agricultural knowledge display, learning activities and cultural communication.

Design Description: Open exhibition space connects the learning outcomes with the agriculture information and exhibits. This visual link with the central void emphasizes the connection between various floors by establishing a continuous process of learning from practice to interpretation of knowledge.





Reading and Reflection Space

Function: The reading area provides a quiet environment for independent learning, discussion and reflection.

Design Description: Natural materials, soft lighting and green tones create a calm l earning atmosphere. The space supports informal communication and personal exp loration, extending agricultural education beyond practical activities into knowledg e sharing and reflection.