

Analysis and countermeasures of land purchase and campus planning in the course of constructing vocational education undergraduate in higher vocational colleges

Yutong Fu¹, Jindong Zhou¹, Junyao Yu²

¹Nanchong Vocational and Technical College, Nanchong, Sichuan, 637000, China

²Sichuan Communication Surveying and Design Institute Co., Ltd, Chengdu, Sichuan, 610000, China

Abstract: The revised Vocational Education Law of the People's Republic of China in 2022 has brought new opportunities for higher vocational education. Various vocational colleges actively carry out construction in accordance with the relevant requirements of the new vocational Education Law and the Setting Standards of Vocational Schools at Undergraduate Level (Trial). In order to meet the requirements of vocational education undergraduate, the total amount of land and campus construction planning should be solved first. Based on the characteristics of vocational colleges, this paper analyzes the difficulties existing in land purchase and campus planning and design of vocational colleges, and puts forward solutions by combining the existing policies and construction technical means.

Keywords: Vocational education undergraduate construction; Land purchase; Campus planning and design

1. Introduction

In 2021, the National Vocational Education Conference was held, which pointed out that vocational education has a broad future and promising prospects. The conference also points out that our vocational education should firmly strengthen the Party's leadership, promote the improvement of quality and excellence of vocational college education, firmly adhere to social needs, adhere to the policy framework, accelerate the construction of public infrastructure and related resources for skills and technical education, and vigorously develop vocational undergraduate education^[1].

The requirements of the state and the favorable policies make colleges and universities with or basically with the bid for vocational undergraduate have accelerated the pace of construction. All higher vocational colleges aim to meet the relevant requirements in the document "Setting Standards for Vocational Schools at Undergraduate Level (Trial)" and actively carry out construction work in all aspects. In terms of infrastructure, the document "Standards for the Establishment of vocational Schools at Undergraduate Level (Trial)" puts forward five requirements in terms of land, building area, practical training and testing sites. To do so would require either a wave of new construction or a revamp of existing resources. The most prominent problem is the insufficient land area of individual higher vocational colleges and the planning and design of campus after the purchase of new land. This paper analyzes the possible difficulties encountered in land purchase and campus planning and design of higher vocational colleges, and gives the corresponding solutions.

2. Vocational education undergraduate infrastructure requirements

In the document "Setting Standards for vocational Schools at Undergraduate Level (Trial)", the land requirements are: the school covers an area of no less than 533,336 square meters, and the average student covers an area of 60 square meters or more. According to the "Interim Regulations on the Establishment of Regular undergraduate schools", the average area of undergraduate level colleges and universities is more than 60 square meters. For the school building area requirements: the total building area of the school is greater than 240,000 square meters, the average school building area is greater than 30 square meters. The school must also have the teaching related to the school's production and education integration training base, production and education integration training platform, teaching and training

attempts.

At present, most higher vocational colleges have not yet met the requirements of land area and total building area, so in order to build a vocational undergraduate as soon as possible, we need to actively purchase land and speed up campus construction.

3. Existing problems and solutions of land purchase and utilization

3.1 Problems existing in land acquisition and utilization

The total area of land is a mandatory index for higher vocational colleges to build a vocational undergraduate. Scientific and reasonable land allocation is a step for the sustainable development of vocational undergraduate. As a scarce and valuable resource, the purchase of land is affected by many factors such as capital, policy, urban planning and available land allowance. The following is an analysis of the more prominent phenomena and problems in the land purchase of higher vocational colleges:

(1) Schools want to expand the overall area of the school, but the surrounding area is useless: due to the gradual development of the city, many schools, especially higher vocational colleges which have been established for a long time, are not so forward-looking in the early stage of construction. As a result, the schools originally built around the city are also surrounded by the urban expansion year by year. The existing campus wants to develop, but there is no land available around the dilemma. If a wholly owned campus is moved to a new campus, the large-scale construction will put enormous pressure on the school's finances.

(2) There is open space around the school, but it cannot be purchased or allocated directly: If there is vacant land around the school campus, the first thing to determine is the nature of the land and whether it can be used as educational land. If not, it involves a lengthy land application process. If land can be used as educational land, it is also a long and arduous work to raise funds for land purchase and to relocate and relocate the land^[2].

(3) Schools own land, but the existing land cannot be used effectively: compared with undergraduate colleges, vocational colleges nationwide exist the situation that local secondary vocational schools and junior colleges are merged^[3-5]. Although the multi-school merger provides some support for the hardware facilities and land amount of the merged higher vocational colleges, it also brings trouble to the centralized and integrated management of the schools. To put it simply, after the merger of many schools, the original independent school became a campus of a certain school. In the process of applying for vocational undergraduate courses, the original old campus was scattered, and the existing buildings on the land involved a large number of residents and users, so it could not carry out large-scale demolition and construction operations. The functions of the old campus could not meet the requirements of the new era, and the management was also very troublesome. Finally, the old campus became the original school staff residential district, not easy to produce new use value.

3.2 Solutions to land acquisition and utilization problems

In view of the above problems, this paper gives the following solutions:

(1) Considering overall relocation due to land shortage: As a subject with strong independent vitality in the city, the university can drive the construction around it and improve the regional economic vitality. If the construction of the existing campus has reached saturation and there is no land for development around, it can negotiate with the local government to seek relevant support for applying for vocational undergraduate programs, and follow the development plan of the city and the university to relocate the new campus as a whole. The existing campus is located in a region with mature surrounding facilities and high land value. The original land can be replaced with the local government to raise funds for the purchase of land for the new campus. Meanwhile, before the relocation, the government should negotiate with the government to reserve an appropriate amount of land around the new campus for the future development of the school. This not only promotes the regional development of the city and provides a new vitality, but also leaves room for the future development of the school.

(2) There is still enough land to expand the original campus or build a new campus: If there is appropriate land around the school and the total amount meets the development of the school, we can negotiate with the government to purchase the land in this area. Regarding regulation, demolition and other work, we should actively seek government support and help, and try our best to connect the newly

purchased land with the original campus land, which is conducive to overall construction and utilization. If the newly purchased land is really not connected to the main campus, the future development and use of the school should be achieved as the goal, the newly purchased soil area meets the requirements of the construction of various functional areas, and the site should be selected to build a new modern campus.

(3) Unified planning of multi-campus land in exchange for construction funds or land: there is a problem that the land of multiple old campuses cannot be used effectively in the merged higher vocational colleges. In this case, we should focus on the overall development plan of the school, abandon some unusable campuses, and negotiate with the relevant government departments where the land is located to exchange the old campuses for school development funds or land resources through replacement, transfer, mortgage and other means. At the same time, through the replacement and transfer of the old campus, the property ownership of the campus assets can be changed, the management and maintenance responsibilities of various building facilities in the old campus can be eliminated, many residential property rights disputes can be avoided, and the pressure of the school property management can be reduced.

(4) Multiple ways to raise land purchase funds: In recent years, the financial investment in education has kept above 10% of the annual budget^[6], and there are special funds for vocational education construction every year. Higher vocational colleges can pay close attention to relevant support policies and actively apply for construction funds. Secondly, higher vocational and vocational colleges have different degrees of connection with enterprises compared with undergraduate colleges. Since vocational colleges and vocational undergraduates are based on vocational skills, there are more school-enterprise cooperation support policies. In the process of applying for vocational undergraduate, we can actively seek the support of enterprise construction and build vocational undergraduate universities together. In addition, they can also actively apply for various kinds of loans and obtain funds related to land purchase and campus construction at low interest by mortgaging part of assets or seeking financing from educational policy banks^[7].

4. Existing problems and solutions in campus planning and design

4.1 Problems in campus planning and design

After the completion of land regulation, purchase, demolition and other work, it is time to start the new construction of the school. The first step of construction is to adjust the plan according to the school's development vision. The planning of vocational college campus is not as perfect as undergraduate college, which has the following problems:

(1) No campus planning or rough planning: when many vocational colleges were first established, the total number of students was not large, and they did not make overall planning for the campus, or the planning was rough^[8]. With the expansion of higher vocational enrollment, the increase of campus personnel traffic, the pursuit of intelligent life, the space, function and supporting facilities of the old campus can not bear the increase of personnel and demand year by year. Without campus construction planning, the contradiction between school function and demand is difficult to solve.

(2) Old planning ideas that cannot be applied to a large campus: The planning ideas of the first batch of universities in China refer to the planning concept of Soviet universities in the 1950s, which emphasized the grouping of functional areas. But now it seems that the concept of only emphasizing campus planning based on functions is not suitable for colleges and universities that have been developing year by year in terms of volume. Blindly focusing on functional zoning may lead to problems such as too much concentration of staff in functional areas, long commuting time for students, and unsatisfied spiritual culture of teachers and students^[9].

(3) The planning does not pay attention to the protection and development of school culture, and the planning of different stages is not integrated: since the construction of colleges and universities is not an overnight construction, but a long-term project lasting several years or even decades, the planning and design should be able to continue and inherit the school spirit and culture. However, in the actual construction, the campus construction time span is large, the initial campus planning and design often can not meet the current functional and spiritual needs, and can not reflect the current campus culture. The new purchase of land is bound to involve new planning. If the new and old planning and design are not integrated, the culture of the school will appear divided. At the same time, the design difference between the new and the old planning will lead to the repeated laying of underground pipelines, connecting cables, regulating the ground environment, digging and repairing at the junction of the new

and old buildings and the regional junction, resulting in a large amount of waste. Therefore, the planning and design of the new campus is not only to arrange buildings and structures on the new land, but should be combined with the needs of teachers and students and the future development vision of the school. The new and old campus should make good use of modern new technology and new technology in accordance with the culture, spirit, function, environment, energy saving, environmental protection and other aspects of the school, and the overall planning and design of sustainable development.

4.2 Solutions to campus planning and design

For the problems related to planning and design, this paper gives the following solutions:

(1) Grasp the spirit of policy, and scientifically establish school planning and design line: Vocational education has been raised to a new height in recent years, and we are constantly exploring the training line of vocational undergraduate, vocational master and vocational doctor. Each higher vocational college must fully learn and understand the spirit of relevant policies when carrying out the campus planning of vocational undergraduate construction, and reserve the space for the future development of the school. But at the same time, we should also do a good job in the law of education, population development research. In recent years, aging problem has shown gradually in our country and the school age population has decreased over 30% in 30 years^[10]. Therefore, in the planning and design of the project, it is necessary to seize the policy dividend, combine the school's school-running characteristics, and plan related building facilities. At the same time, it is necessary to consider the future enrollment of vocational undergraduate students, set the school's development tone unwavering, and carry out reasonable and appropriate planning and design of various buildings, facilities and environment.

(2) Focus on the integration of campus history, culture, natural resources and the new plan: one hundred years to cultivate people, ten years to grow trees. Colleges and universities are a place where knowledge and culture accumulate and precipitate for a long time. In the process of vocational undergraduate construction, the overall planning and design of the campus must pay attention to the excavation and inheritance of campus culture. The original campus building facilities should be protected and repaired, and its functions and supporting facilities should be reasonably planned and designed according to the functions and requirements of the new era. New and old buildings on the same campus should coordinate and blend with each other, and the planning and design of different campuses should conform to the overall spirit of the school. The cultural history of the campus should be preserved and inherited, and the functional quality of each existing space should be optimized and improved^[11]. At the same time, it is necessary to make full use of the natural resources of the land where the campus is located, give full play to the role of environmental education, preserve the natural landform of the land, and explore and develop the multiple activity space integrating landscape environment and functional area^[12].

(3) Division of multi-center functional areas: the expansion and new construction of the campus do not expand the original functional space in proportion, but should be modeled on the multi-center idea in urban development planning, reasonably divide the regional functional centers, combine the needs of teachers and students in learning and living, natural environment, and scientifically arrange the moving lines. That is to say, all building facilities are arranged according to the frequency of use of building facilities, the category of users, and their interrelation^[9]. For example, the teaching building of a department can be used as the regional center, which is surrounded by the experimental and training base of the department and the student dormitory of the department and radiates through the road to connect with the university function center such as the library, canteen and sports field. Another example is the administrative center. The frequency of students going to the administrative center is not high, and the frequency of school staff and vehicles going to the functional center is high. The administrative office building can be planned near the school gate, which is connected with the public teaching building, the centralized living area of the staff and the library.

(4) To integrate new technology and new concept into the planning design: our country has entered the stage of high quality development, and must take the development route of resource saving and environmental protection. Therefore, on the way to create a vocational undergraduate, our planning should also be more in line with the requirements of green environmental protection and resource saving. In the aspect of underground pipe network, the past planning and design focused on surface function planning, but ignored the construction of underground pipe network. Many higher vocational colleges after the merger and establishment of underground pipe network data missing, construction data is incomplete. As a result, the existing campus can only deal with the problems where they occur. Today, dig the ground to repair the rain-polluted pipe, and tomorrow open the underground well to maintain the wire and cable. Campus sewage, waterlogging, power shortage and other prominent problems. Therefore,

in the planning and design of the new campus, the laying methods of pipelines and cables should be clearly defined, relevant drawings should be drawn, and the underground comprehensive pipe gallery can be planned and constructed if conditions permit, so as to leave enough space for future overhaul and increase capacity^[13], so as to save resources and avoid disorderly and ineffective overhaul and maintenance. In terms of campus green environment, sponge city concept and related construction technology can be used to plan and build sponge campus in combination with campus green, wetland and water resources. Through rainwater absorption, storage and slow release, campus waterlogging can be reduced and plant water and soil conservation and conservation ability can be improved^[14]. In terms of the overall energy saving of the campus, the energy saving grade of each building and the way of resource recycling should be determined in the overall planning stage, and gradually deepened in the subsequent design stages.

5. Conclusion

This paper analyzes the problems such as land increase, land resource integration and fund raising in land purchase, and puts forward some solutions such as campus relocation, land replacement, school-enterprise cooperation and mortgage loan. To the extensive campus planning, not considering the long-term comprehensive, the design concept is not novel, unable to meet the spiritual and cultural needs of teachers and students and other problems, it gives a clear planning and design route, digging the campus history and culture, multi-center planning, using the new construction concept and technology for planning and other solutions.

In general, there are still a lot of land and planning problems to be solved in the way of applying for vocational undergraduate education in higher vocational colleges. It is still necessary for relevant staff to open up their minds, innovate solutions to problems, actively seek policy support, and complete the related work from vocational colleges to vocational undergraduate schools with high quality and efficiency.

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