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The Architectural and Educational Environment as a Factor in Shaping the Student of New Uzbekistan (Continuity, pedagogical transformation, and the priorities of the “Uzbekistan — 2030” Strategy)

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Abstract

The article examines the architectural and educational environment as an active pedagogical resource linking national priorities for developing the intellectual and creative potential of the individual, the renewal of pedagogy, the transformation of the university, and the formation of the student's personality. Based on a systematization of the presented materials, a logical model is constructed for the transition from the strengths of historical educational experience to a modern research-oriented, project-based, digital, and artistic-aesthetic university. Particular attention is paid to the influence of composition, proportions, light, color, materials, national motifs, landscaping, and the typology of learning spaces on students' aesthetic perception, emotional culture, historical memory, communication, independence, and creativity. A sequence of levels through which the environment exerts its influence—sensory, emotional, cognitive, value-based, and creative—is proposed, demonstrating that the highest pedagogical outcome is the student's transition from perceiving space to its meaningful transformation.

Keywords: New Uzbekistan, “Uzbekistan - 2030” Strategy, architectural

and educational environment, university, student, artistic-aesthetic culture, pedagogy, human capital, research-based learning, project-based learning, cultural heritage.

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A modern university can increasingly no longer be understood merely as a collection of classrooms, administrative premises, and auxiliary infrastructure. Within the logic of the presented materials, it functions as an integrated educational ecosystem in which space participates in learning alongside disciplinary content, teaching methods, and the culture of the university community. The quality of architecture therefore acquires pedagogical significance: spatial planning determines interaction scenarios; light and color affect emotional well-being; libraries and coworking spaces support independent work; laboratories stimulate research; workshops support design activity; and galleries and national motifs place the student within a cultural context.

The relevance of this approach is particularly pronounced in relation to New Uzbekistan. The materials link the country's strategic development goals with human capital, new pedagogy, a new type of university, and a new architectural educational environment. As a result, architecture ceases to be merely a backdrop to the educational process and becomes one of the conditions for forming an independent, culturally developed, research-active, and creative professional.

The purpose of the article is to systematize the presented provisions and reveal the architectural and educational environment as a pedagogical mechanism for shaping the modern student, combining historical continuity, new educational methods, and the development priorities of New Uzbekistan.

Historical Continuity as the Foundation of the Modern Educational Environment

The transformation of educational architecture does not require the rejection of previous experience. On the contrary, the materials identify a number of systemic qualities of the historical educational model that remain valuable today: accessibility, fundamentality, the high status of the teacher, systemic coherence, practical orientation, an indigenous scientific school, developed infrastructure, collective activity, and

professional training. It is essential to transfer these qualities from their former organizational form into a modern spatial and pedagogical model. Thus, broad access to education today should be expressed not only in the number of buildings but also in the accessibility, inclusiveness, comfort, and aesthetic quality of the environment. Fundamental education requires libraries, laboratories, and interdisciplinary spaces. The high status of the teacher receives spatial expression through mentoring and consultation zones. Systemic coherence is transformed into educational clusters linking school, university, science, and industry. Practical orientation is embodied in workshops, makerspaces, project studios, and educational-production laboratories.

Table 1. Strengths of the Historical Education System and Their Significance for the Modern Educational Environment

Direction	Strength of Historical Experience	What Should Be Preserved and Developed Today	Architectural and Aesthetic Expression
1. Accessibility of education	Mass coverage of the population by education	Equal access to quality education regardless of region and social status	Accessible, inclusive, comfortable, and aesthetically organized schools and universities
2. Fundamentality	Strong general, mathematical, and natural-science training	Fundamental knowledge - interdisciplinarity - contemporary practice	Laboratories, libraries, research and interdisciplinary spaces
3. High status of the teacher	Social authority of the teacher and educator	Enhancing professional status and developing mentoring	Teaching, consultation, and communication spaces

Direction	Strength of Historical Experience	What Should Be Preserved and Developed Today	Architectural and Aesthetic Expression
4. Systemic coherence of education	Link between school, vocational education, university, and science	The “school - university - science - industry” chain	Educational clusters and campuses integrating learning, research, and practice
5. Practical orientation	Labor education, technical skills, community activity	Project-based, practice-oriented, and problem-based learning	Workshops, makerspaces, project studios, laboratories, modeling
6. Science	Training of national research personnel and scientific schools	Research university; integration of science into education	Scientific laboratories, research centers, experimental and exhibition spaces
7. Educational infrastructure	Large-scale construction of schools, libraries, and universities	Transition from the quantity of buildings to the quality of the educational environment	Functionality, comfort, aesthetic expressiveness, and psychological well-being
8. Collective activity	Joint work, events, and collective projects	Teamwork, communication, and collaborative design	Atriums, coworking spaces, recreational areas, courtyards, informal communication zones

Direction	Strength of Historical Experience	What Should Be Preserved and Developed Today	Architectural and Aesthetic Expression
9. Professional training	Developed system of technical and vocational education	Modern professional, engineering, and technological education	Educational-production laboratories, technology centers, workshops, STEAM spaces

Note. The table systematizes historical experience, directions of continuity, and their spatial expression in the modern educational environment.

Thus, continuity should be understood not as the reproduction of standardized architecture of the past, but as the preservation of strong educational principles while changing the spatial means of their implementation. This creates a basis for the next level of analysis-the relationship among state strategy, pedagogy, and university architecture.

The “Uzbekistan — 2030” Strategy and the Logic of Forming a New Type of University

In the presented strategic scheme, the development of the modern educational environment is structured as a cause-and-effect chain. The starting point is the “Uzbekistan - 2030” Strategy, followed by the development of the individual’s intellectual and creative potential, new pedagogy, a new type of university, a new architectural educational environment, the creative student, and, ultimately, the professional of New Uzbekistan. This sequence is fundamental: architectural transformations are not an end in themselves but should serve the broader process of personal development and the enhancement of the individual’s intellectual and creative potential.

Table 2. Strategic Chain for the Development of the Modern Educational Environment of Uzbekistan

Stage	Model Component	Pedagogical Meaning
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Stage	Model Component	Pedagogical Meaning
1	"Uzbekistan - 2030" Strategy	Establishes the overall modernization vector and requirements for the quality of the individual's intellectual and creative potential
2	Development of the individual's intellectual and creative potential	Shifts emphasis to the quality of personality, knowledge, competencies, culture, and capacity for development
3	New pedagogy	Requires student agency, research, design, dialogue, mentoring, and interdisciplinarity
4	New type of university	Integrates education, research, culture, communication, creativity, and aesthetics
5	New architectural educational environment	Creates spatial conditions for flexible learning scenarios, independent work, and creativity
6	Creative student	Moves from passive assimilation to research, design, evaluation, and creation
7	Professional of New Uzbekistan	Combines professional competence, independence, cultural maturity, and a creative stance

An important methodological conclusion follows from this model: if pedagogy changes while the architectural environment remains designed solely for frontal transmission of ready-made knowledge, a structural contradiction arises. New methods require new spatial scenarios-the ability to move quickly from lecture to discussion, from individual work to group work, from theory to experiment, and from research to public presentation of results.

Transition from the Traditional Model to a Modern Architectural and Pedagogical Environment

The materials consistently demonstrate a transition from standardization to variability, from the transmission of ready-made knowledge to the creation of new knowledge, from the teacher as the sole source of information to the teacher as mentor, and from the standard classroom

to a transformable environment. This is not simply a list of innovations but a change in the very logic of educational space. In the traditional model, a room fixes a single behavioral scenario; in the modern model, space should accommodate several modes of activity and support student agency.

Table 3. Transition from the Traditional Educational Model to a Modern Architectural and Pedagogical Environment

Traditional Model	What Needs to Be Developed Today	Reflection in the Architecture of the Educational Environment
Standardization	Variability of educational trajectories	Flexible spaces, individualized learning formats and routes
Transmission of ready-made knowledge	Creation of new knowledge	Research laboratories, project studios, experimental spaces
Teacher as the main source of information	Teacher as mentor, researcher, moderator	Zones for consultation, discussion, mentoring, and collaborative work
Standard classroom	Transformable educational environment	Mobile furniture, transformable classrooms, reconfigurable layouts
Fixed workplace	Various learning scenarios	Individual, group, discussion, project, and recreational zones
Control of information reproduction	Assessment of competencies and activity outcomes	Presentation zones, project defenses, exhibitions, and demonstration of results
Collectivity "from above"	Conscious team activity	Coworking spaces, communication zones, open spaces
Standard interior	Aesthetically rich and individualized environment	Color, light, proportions, art, national motifs, landscaping, design

Traditional Model	What Needs to Be Developed Today	Reflection in the Architecture of the Educational Environment
Learning separated from the urban environment	University as part of the city, society, and culture	Open campuses, public spaces, museums, galleries, routes
Theory separated from practice	Project-based and research-based learning	Workshops, laboratories, makerspaces, STEAM zones, educational-production sites

The key transition can be expressed by the following formula: traditional model — flexible architectural environment — mentoring — research — design — creativity — creation of new knowledge. In this chain, architecture is not the final decorative stage but the material infrastructure of the pedagogical method.

Priorities of Modern Pedagogy and Their Architectural Expression

In the materials, the highest priority is given to research-based and project-based learning, artistic-aesthetic education, interdisciplinarity, creative thinking, and connection with cultural heritage. Digital pedagogy, mentoring, team learning, and independent learning are also highly significant. Together, these areas establish requirements for university architecture: it must simultaneously provide conditions for concentration and communication, digital work and physical modeling, research and exhibition representation, modernity and cultural rootedness.

Table 4. Priority Areas of Modern Pedagogy and Their Architectural Expression

Priority Area	Significance	Architectural Expression
Research-based learning	Very high	Laboratories, research centers
Project-based learning	Very high	Project studios

Priority Area	Significance	Architectural Expression
Artistic-aesthetic education	Very high	Galleries, exhibition spaces, architectural expressiveness
Interdisciplinarity	Very high	Shared faculty spaces
Creative thinking	Very high	Creative hubs, workshops
Digital pedagogy	High	Media centers, VR/AR spaces
Mentoring	High	Small meeting rooms and communication spaces
Team learning	High	Collaborative spaces
Independent learning	High	Individual work zones
Connection with cultural heritage	Very high for Uzbekistan	Integration of national architectural motifs

Note. The priority levels represent the author's analytical assessment of the materials and are not the results of a sociological survey.

The connection with cultural heritage occupies a special place. In the context of Uzbekistan, national motifs, historical memory, and visual culture can be integrated not as decorative quotation but as a means of students' cultural identification. This implies thoughtful work with proportions, ornament, materials, courtyard spaces, shade, water, greenery, and other principles capable of entering into dialogue with contemporary technologies and educational functions.

Model of the Modern University of New Uzbekistan

The modern university is represented in the materials through eight interconnected types of space. Their value lies in the fact that each functional block corresponds to a pedagogical and aesthetic function. Functional zoning thereby becomes a pedagogical model: the knowledge space is responsible for fundamental training; the research space for scientific thinking; the creativity space for design; the communication space for collaborative activity; the culture space for aesthetic values; the digital education space for technological literacy;

the independent-work space for responsibility and concentration; and the natural-recreational space for psychological restoration and environmental education.

Table 5. Model of the Modern University of New Uzbekistan

Functional Space	Main Elements	Pedagogical and Aesthetic Function
Knowledge space	Lecture halls, libraries	Transmission and comprehension of fundamental knowledge; culture of intellectual work
Research space	Laboratories, research centers	Research competencies, scientific thinking, experimental and innovative activity
Creativity space	Workshops, architectural studios, art-lab	Imagination, design thinking, artistic-aesthetic culture, creation of a new product
Communication space	Atriums, courtyards, recreational areas	Communication, discussion, teamwork, social interaction, university community
Culture space	Galleries, museums, exhibition zones	Engagement with art and heritage; aesthetic taste, historical memory, value-based attitude
Digital education space	VR/AR spaces, media laboratories	Digital literacy, visual modeling, interactive learning
Independent-work space	Coworking spaces, individual places, quiet zones	Independence, responsibility, concentration, research culture, individual trajectory
Natural-recreational space	Courtyards, gardens, green terraces	Psychological restoration, environmental education, visual comfort, and harmonization

The model can be expressed by the following formula: UNIVERSITY = EDUCATION + RESEARCH + CULTURE + COMMUNICATION + CREATIVITY + AESTHETICS. It is precisely the sum of functions that matters: excluding any component impoverishes the educational ecosystem. For example, a university without cultural spaces may retain its academic function but will be less effective in developing aesthetic and historical sensitivity; without spaces for independent work, it restricts student agency; and without research zones, it hinders the transition from acquiring knowledge to creating it.

Mechanisms of Architecture's Influence on the Student

The pedagogical action of architecture is revealed through specific components of the environment. Composition organizes the perception of order; proportions develop a sense of harmony; light is associated with emotional state; color guides the perception of space; material creates tactile and visual experience; national motifs evoke cultural associations; landscaping supports environmental awareness; galleries provide contact with art; open spaces stimulate communication; project studios foster creativity; libraries support independent work; and historical elements create a link between generations.

Table 6. How Architecture Influences the Student

Architectural Component	Pedagogical Impact	Quality Formed
Building composition	Forms a sense of order	Aesthetic perception
Proportions	Develop a sense of harmony	Artistic taste
Light	Affects emotional state	Psychological comfort
Color	Guides the perception of space	Emotional culture
Material	Forms tactile and visual experience	Sensory culture
National motifs	Create cultural associations	National identity

Architectural Component	Pedagogical Impact	Quality Formed
Landscaping	Forms environmental awareness	Environmental culture
Galleries	Provide contact with art	Artistic culture
Open spaces	Stimulate communication	Social competence
Project studios	Stimulate creativity	Creativity
Libraries	Create a culture of independent work	Research competence
Historical elements	Create a link between generations	Historical memory

This table shows that the influence of the environment is multidimensional. It is not limited to aesthetic pleasure: architecture simultaneously affects emotional state, cognitive organization, social behavior, cultural identity, and the capacity for independent activity. Consequently, evaluating an educational building solely by capacity, area, and engineering indicators is insufficient; the pedagogical scenario and the personal qualities being formed must also be taken into account. Five Levels of Influence of the Aesthetic Educational Environment on the Student's Personality. To understand the dynamics of forming artistic-aesthetic culture, a five-level model is useful. It begins with sensory perception and culminates in creative activity. This sequence reflects movement from the immediate perception of form, light, and texture to understanding cultural content, forming values, and developing the ability independently to create an aesthetically high-quality product or transform the environment.

Table 7. Five Levels of Influence of the Aesthetic Educational Environment on the Student's Personality

Level of Influence	Outcome	Pedagogical Significance for the Architectural Environment
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Level of Influence	Outcome	Pedagogical Significance for the Architectural Environment
Sensory	Perception of form, color, light, texture, and spatial relationships	Visual and spatial sensitivity; primary aesthetic experience
Emotional	Aesthetic experience and emotional response to the environment	Positive emotional state, comfort, and engagement in learning
Cognitive	Understanding of the architectural idea, composition, image, and cultural meaning	Architecture as a source of knowledge; development of analytical and figurative thinking
Value-based	Conscious attitude toward culture, heritage, beauty, and environmental quality	Aesthetic values, cultural identity, careful attitude toward heritage
Creative	Creation of an aesthetic product, project, image, or proposal for transforming the environment	Transition from perception and evaluation to independent creative activity

The creative level is of particular significance. It is here that the student ceases to be merely a consumer of a ready-made environment and becomes a subject of its evaluation and transformation. Pedagogically, this means that the ultimate goal of aesthetic education lies not only in the ability to recognize beauty and harmony but also in readiness to create a culturally meaningful, functional, and aesthetically high-quality environment.

Barriers to Transformation and Architectural-Pedagogical Solutions

The transition to the new model encounters a number of persistent barriers. The materials identify reproductive learning, student passivity, authoritarian communication, standardized educational spaces, the gap between theory and practice, the gap between science and education, and the underestimation of the aesthetics of the educational

environment. Importantly, each barrier corresponds not only to a pedagogical change but also to a spatial solution.

Table 8. Seven Main Barriers and Directions for Transforming the Modern Educational Environment

Problem / Barrier	Required Change	Architectural-Pedagogical Solution
Reproductive learning	Research-based learning	Laboratories, research spaces, project classrooms, conditions for inquiry and experimentation
Student passivity	Student agency	Flexible spaces for choosing activity formats, individual and group work, and initiative projects
Authoritarian communication	Mentoring and dialogue	Small meeting rooms, discussion zones, open communication spaces
Standardized educational spaces	Variable educational environment	Transformable classrooms, mobile furniture, coworking spaces, recreational and multifunctional spaces
Gap between theory and practice	Project-based education	Workshops, project studios, makerspaces, educational-production sites, project demonstrations
Gap between science and education	Research university	Integration of academic buildings with laboratories, research centers, and interdisciplinary spaces
Underestimation of environmental aesthetics	Architectural-aesthetic pedagogy	Thoughtful use of composition, light, color, materials, art, national heritage, and landscape

Overcoming these barriers requires the synchronous transformation of pedagogy and architecture. Student agency cannot be formed in an environment where all scenarios are rigidly predetermined; project

thinking is difficult to develop without places for model-making, experimentation, and presentation of results; and a university community is difficult to form without spaces for informal communication. Therefore, architectural-aesthetic pedagogy can be regarded as an integrative approach in which space becomes an active participant in education and upbringing.

Integrated Model for Shaping the Student of New Uzbekistan. Comparing all the tables makes it possible to construct a unified model. Its first layer is historical continuity: accessibility, fundamentality, respect for the teacher, systemic coherence, practicality, science, and collectivism. The second layer is strategic: development of the individual's intellectual and creative potential and a new type of university. The third is pedagogical: research, design, interdisciplinarity, mentoring, independence, and digital literacy. The fourth is architectural: flexible classrooms, laboratories, workshops, coworking spaces, galleries, media laboratories, green spaces, and a culturally expressive environment. The fifth is the personal outcome: aesthetic perception, artistic taste, emotional and sensory culture, historical memory, social competence, research independence, and creativity.

In this system, the student's artistic-aesthetic culture is not an isolated outcome. It is formed at the intersection of perception, knowledge, value, and action. A beautifully organized environment is insufficient in itself if the student is not involved in interpreting it; educational activity is likewise constrained if space does not support the relevant scenarios. The maximum effect arises when architecture, pedagogy, and student activity form a coherent system.

For the universities of New Uzbekistan, this means the need to move from evaluating a building as a real-estate object to evaluating the educational environment as pedagogical infrastructure. When designing and modernizing campuses, questions should concern not only area and number of places but also what forms of activity the space stimulates, what cultural meanings it conveys, and how it supports independence, interaction, research, creativity, and psychological comfort.

Practical Recommendations

1. When reconstructing and designing universities, use functional-pedagogical zoning: separately provide spaces for knowledge, research,

creativity, communication, culture, digital education, independent work, and recreation.

2. Reduce the proportion of rigidly fixed teaching spaces in favor of transformable classrooms and multifunctional zones that allow the lesson scenario to be changed.

3. Develop the “classroom — laboratory — workshop — exhibition zone” linkage so that the educational outcome progresses from knowledge to experiment, project, and public demonstration.

4. Create architectural conditions for mentoring: small meeting rooms, consultation zones, and places for individual and group work between teachers and students.

5. Regard libraries as centers for independent and research work, supplementing them with quiet zones, coworking spaces, and digital resources.

6. Integrate Uzbekistan’s cultural heritage through the meaningful use of national principles of composition, materials, motifs, courtyard and landscape solutions, while avoiding superficial stylization.

7. Use light, color, texture, landscaping, and works of art as pedagogically significant elements that influence emotional state and aesthetic development.

8. Involve students in evaluating and transforming the university environment through project assignments, research, visual analysis, model-making, digital modeling, and exhibitions of proposals.

9. When assessing the quality of educational infrastructure, consider not only technical indicators but also pedagogical flexibility, aesthetic expressiveness, accessibility, inclusiveness, communication potential, and psychological comfort.

10. Regard the development of university architecture as part of the broader policy for developing the intellectual and creative potential of the individual, rather than as an isolated construction task.

Conclusion

The systematization of the materials demonstrates that the architectural and educational environment can be regarded as a connecting link between the state development strategy, the university’s pedagogical model, and the student’s personal development. The strengths of the historical system—accessibility, fundamentality, systemic coherence,

respect for the teacher, practical orientation, scientific character, and collectivism—remain relevant but require new spatial expression.

The modern university of New Uzbekistan should support not one but multiple educational scenarios: acquisition of fundamental knowledge, research, design, creativity, communication, independent work, digital learning, and cultural development. This gives rise to the requirement for flexible, multifunctional, aesthetically rich, and culturally meaningful architecture.

At the personal level, the influence of such an environment unfolds from sensory perception to emotional response, then to understanding, value-based attitudes, and finally to creative action. It is precisely the creative level that makes it possible to connect architecture with the task of forming the professional of New Uzbekistan: not a passive user of a ready-made environment, but an independent, research-active, culturally responsible, and creative participant in social development.

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