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(Original Signature of Member)

117TH CONGRESS  
1ST SESSION

**H. R.** \_\_\_\_\_

To establish a grant program to fund the installation of green roof systems on public school buildings, and for other purposes.

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IN THE HOUSE OF REPRESENTATIVES

Ms. VELÁZQUEZ introduced the following bill; which was referred to the Committee on \_\_\_\_\_

\_\_\_\_\_  
**A BILL**

To establish a grant program to fund the installation of green roof systems on public school buildings, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Public School Green  
5 Rooftop Program”.

6 **SEC. 2. FINDINGS.**

7 Congress finds the following:

1           (1) Green roofs on educational facilities can  
2 provide an easily accessible site to teach students  
3 and visitors about biology, math, STEM, art, sus-  
4 tainability, green roof technology, and the benefits of  
5 green roofs.

6           (2) The Environmental Protection Agency rec-  
7 ognizes the installation of green roofs throughout a  
8 city can help reduce surface urban heat islands and  
9 cool the air.

10          (3) The General Services Administration recog-  
11 nizes a typical green roof lasts more than 40 years  
12 before requiring replacement, whereas the life of an  
13 unvegetated conventional roof could be 10 to 15  
14 years. By making the roof membranes last longer,  
15 green roofs can save taxpayer money and reduce the  
16 amount of waste that is diverted into landfills.

17          (4) The National Park Service recognizes green  
18 roofs can improve the energy performance of build-  
19 ings, help manage stormwater, reduce airborne emis-  
20 sions, and mitigate the effects of urban heat islands.

21          (5) The Food and Agriculture Organization of  
22 the United Nations encourages and supports coun-  
23 tries to promote school gardens with educational  
24 goals to help students, school staff, and families  
25 make the connection between growing food and good

1       diets, develop life skills, and increase environmental  
2       awareness.

3           (6) Greater weatherization and insulation of-  
4       ferred by green roof assemblies reduce the amount of  
5       energy needed to moderate the temperature of a  
6       building, as roofs can be the source of the greatest  
7       heat loss in the winter and the hottest temperatures  
8       in the summer.

9           (7) A green roof can protect waterproofing  
10      membranes from exposure to ultraviolet radiation  
11      and wide temperature fluctuations. This protection  
12      feature can greatly extend the lifespan and cost ef-  
13      fectiveness of waterproofing membranes.

14          (8) Green roofs can contribute to landfill diver-  
15      sion by prolonging the life cycle of waterproofing  
16      membranes and insulation materials. By increasing  
17      the life cycle and reducing roof replacement costs,  
18      less roofing materials over the life of the building  
19      need to be disposed of. Green roofs generate the  
20      need for recycled components in growing media.  
21      Green roofs can prolong the service life of heating,  
22      ventilation, and HVAC systems through decreased  
23      use.

24          (9) Green roofs can reduce the amount of  
25      stormwater runoff and also delay the time at which

1 runoff occurs, resulting in decreased stress on sewer  
2 systems and streams at peak flow periods and de-  
3 creased pollution in United States waterways.

4 (10) The plants on green roofs can capture air-  
5 borne pollutants, atmospheric deposition, and can  
6 filter noxious gases, as well as provide habitat for  
7 and habitat connectivity for local species of polli-  
8 nators.

9 (11) Green roofs can provide much needed ad-  
10 ditional greenspaces to urban centers. These  
11 greenspaces can create new habitats for a wide vari-  
12 ety of plants, animals, and insects needed for  
13 healthy biosystems.

14 (12) Green roofs can provide much needed  
15 greenspaces for healthy human habitation of dense  
16 urban spaces. Green roofs can be used for passive  
17 and active recreation and relaxation spaces for hu-  
18 mans.

19 (13) Green roofs can generate potential employ-  
20 ment for green roof installation and maintenance  
21 personnel. Specialized green roof installations can  
22 generate income and employment for urban farm op-  
23 erations.

24 (14) The temperature moderating effects of  
25 green roofs can reduce demand for electrical power

1 and other energy and fuel sources, and potentially  
2 decrease the amount of CO<sub>2</sub> and other polluting by-  
3 products being released into the air.

4 (15) Through natural transpiration, plants on  
5 vertical and horizontal surfaces are able to cool cities  
6 during hot summer months and reduce the urban  
7 heat island effect.

8 (16) Green roofs plants can capture dust and  
9 particulate matter throughout cities, as well as the  
10 production of smog. This can play a role in reducing  
11 greenhouse gas emissions and adapting urban areas  
12 to a future climate with warmer summers.

13 (17) Green roofs improve human health and  
14 wellbeing through improvement of local air quality,  
15 regulation of temperature, and sequestration of  
16 harmful airborne substances, particularly among  
17 children and other vulnerable or at-risk commu-  
18 nities.

19 (18) Green roofs on public infrastructure pro-  
20 vide cost-savings for the life of the project, through  
21 defraying future replacement and energy costs.

22 (19) Green roofs contribute to the stabilization  
23 of neighborhoods as a result of improved health, sce-  
24 nic qualities, and elevated nearby property valuation.

1           (20) Green roofs provide habitat for wildlife  
2           such as pollinators and migratory birds.

3 **SEC. 3. GRANTS FOR PLANNING ASSISTANCE.**

4           (a) GRANT PROGRAM AUTHORIZED.—The Secretary,  
5 taking into account recommendations from the Director  
6 of the Weatherization and Intergovernmental Programs  
7 Office of the Department of Energy, shall make grants  
8 to eligible entities to pay the costs of planning assistance  
9 for a green roof system described in subsection (b).

10          (b) ALLOWABLE USE OF FUNDS FOR GRANTS FOR  
11 PLANNING ASSISTANCE.—An eligible entity receiving a  
12 grant under this section shall use the grant for the fol-  
13 lowing purposes:

14           (1) Identification of opportunities to use green  
15 roofs.

16           (2) Assessment of vertical structures, or pos-  
17 sible vertical structures, to support vegetation and  
18 ground-level areas that support vegetation in the  
19 same school building.

20           (3) Permitting and siting issues, including po-  
21 tential synergy of the green roof with green roofs,  
22 green walls, and rain gardens in neighboring build-  
23 ings.

24           (4) Business planning and financial analysis.

1           (5) Architectural and engineering analysis, in-  
2           cluding analysis of—

3                   (A) a site to determine required structural  
4           loading capacity;

5                   (B) plans for material transportation to  
6           roof;

7                   (C) the distribution of material and equip-  
8           ment during construction;

9                   (D) plans for reinforcement of roof;

10                  (E) plans for structural safety;

11                  (F) plans to increase available loading;

12                  (G) plans to determine need and location  
13           of vegetation-free zones for access to mechan-  
14           ical equipment, roof parapets, and other com-  
15           mon roof structures;

16                  (H) plans for need for permanent or semi-  
17           permanent irrigation systems to provide supple-  
18           mental water during times of drought; and

19                  (I) plans to determine need for a leak de-  
20           tection system.

21           (6) Cost estimation, including—

22                   (A) technical information on the cost of  
23           construction (market prices, labor, materials,  
24           and transportation);

25                   (B) a life cycle cost analysis;

1 (C) an estimate of operational costs; and

2 (D) an estimate of costs to include rec-  
3 reational space in order to meet the require-  
4 ments of title III of the Americans with Disabil-  
5 ities Act of 1990 (42 U.S.C. 12101 et seq).

6 (7) Grant writing services, including reimburse-  
7 ment for grant writing services used to obtain a  
8 grant under this section.

9 (c) APPLICATION.—To receive a grant under this sec-  
10 tion, an eligible entity shall submit to the Secretary an  
11 application at such time, in such manner, and containing  
12 such information as the Secretary may require.

13 **SEC. 4. PUBLIC SCHOOL GREEN ROOF INSTALLATION**  
14 **GRANT PROGRAM.**

15 (a) PUBLIC SCHOOL GREEN ROOF INSTALLATION  
16 PROGRAM.—Not later than 1 year after the date of the  
17 enactment of this Act, the Secretary shall award grants,  
18 on a competitive basis, to eligible entities to install an ex-  
19 tensive or intensive green roof system.

20 (b) APPLICATION.—To receive a grant under sub-  
21 section (a), an eligible entity shall submit to the Secretary  
22 an application at such time, in such manner, and con-  
23 taining such information as the Secretary may require,  
24 which shall include—

1 (1) a letter of compliance from local regulatory  
2 bodies to—

3 (A) certify a complete review of proposed  
4 design to ensure that it meets municipal re-  
5 quirements;

6 (B) ensure that installation is carried out  
7 in accordance with local standards and incentive  
8 program performance requirements (if avail-  
9 able);

10 (C) determine requirements for issuing  
11 permits;

12 (D) determine occupancy requirements for  
13 fire codes; and

14 (E) ensure projects meet the minimum  
15 performance standard specified within the Liv-  
16 ing Architecture Performance Tool (LAPT) rat-  
17 ing system for green roofs and walls;

18 (2) a complete description of the eligible enti-  
19 ty's plans for reinforcement of its roof to withstand  
20 a green roof, if needed; and

21 (3) a complete description of the eligible enti-  
22 ty's plan for the installation and operation of a  
23 green roof system, including descriptions of—

24 (A) the square footage of the proposed  
25 vegetated area and anticipated soil depth;

1 (B) the hiring criteria and qualifications  
2 for green roof installation and maintenance per-  
3 sonnel with the inclusion of local workforce  
4 trainees, including at least one Green Roof Pro-  
5 fessional (GRP) as accredited by the Green  
6 Roof Industry Association;

7 (C) the methods for the green roof installa-  
8 tion and maintenance;

9 (D) a plan for utilization of the green roof,  
10 including weatherization, recreational space,  
11 education, food production, or whether access  
12 and utilization will be extended to members of  
13 the neighborhood;

14 (E) a plan for intensive green roof applica-  
15 tions that include recreational space use to  
16 meet the requirements of title III of the Ameri-  
17 cans with Disabilities Act of 1990 (42 U.S.C.  
18 12101 et seq);

19 (F) a strategy for increasing energy effi-  
20 ciency and reducing heat reflection; and

21 (G) a plan for hiring low-income individ-  
22 uals or individuals registered with a one-stop  
23 center for installation and maintenance posi-  
24 tions.

25 (4) the eligible entity's maintenance plan.

1 (c) PRIORITY.—In awarding grants under subsection  
2 (a), the Secretary shall give priority to eligible entities in  
3 which not fewer than 30 percent of students served by  
4 such entities are from families with incomes below the pov-  
5 erty line.

6 (d) INSTALLATION.—Not later than 4 years after re-  
7 ceiving a grant under subsection (a), an eligible entity  
8 shall complete installation of a green roof system.

9 (e) MAINTENANCE OF INFRASTRUCTURE.—In addi-  
10 tion to receiving a grant under subsection (a), each eligible  
11 entity that meets the installation requirements of sub-  
12 section (d) shall receive additional funding for an addi-  
13 tional 4-year period for maintenance activities, which may  
14 include the following:

15 (1) Conducting routine inspections throughout  
16 the year to monitor the condition of the green roof  
17 and surrounding roof areas and structures, espe-  
18 cially after storm events.

19 (2) Monitoring plant health and replacing any  
20 plants, as necessary.

21 (3) Noting any areas impacted by rooftop  
22 microclimates (including wind erosion, shady spots,  
23 exhaust vents, drip edges, and intense reflected  
24 light) where replanting may not be successful, and

1 alternate planting types, planting techniques, or an  
2 alternate approach may be necessary.

3 (4) Watering nonirrigated systems during pro-  
4 longed drought periods and maintenance of any irri-  
5 gation system for the green roof.

6 (5) Addressing weeds and pests when needed  
7 using organic, essential-oils based products.

8 (6) For intensive green roofs where more highly  
9 diverse plant groups and types are used, ensuring  
10 plant maintenance and care is generally consistent  
11 with the requirements of ground-level landscaping,  
12 including consultation with a horticulturalist, agron-  
13 omist, or landscape professional.

14 (7) Engaging local workforce trainees.

15 **SEC. 5. REPORT TO THE CONGRESS.**

16 Not later than 1 year after the date of the enactment  
17 of this Act, the Secretary shall submit a report to the  
18 Committee on Energy and Commerce of the House of  
19 Representatives, the Committee on Education and Labor  
20 of the House of Representatives, and the Committee on  
21 Health, Education, Labor, and Pensions of the Senate,  
22 and make publically available on the Internet website of  
23 the Department of Energy, a report describing—

24 (1) each grant application received under this  
25 Act; and

1           (2) any grants awarded under this Act, includ-  
2           ing—

3                   (A) the name and location of the eligible  
4           entity;

5                   (B) the total amount of the grant;

6                   (C) the date on which the grant was  
7           awarded;

8                   (D) the square footage of vegetated area,  
9           soil depth, and soil porosity of media of each  
10          public school green roof funded with the grant;  
11          and

12                   (E) any other data the Secretary deter-  
13          mines to be necessary for an evaluation of the  
14          benefits of a public school green roof.

15 **SEC. 6. DEFINITIONS.**

16          In this Act:

17                   (1) **ELEMENTARY SCHOOL.**—The term “elemen-  
18          tary school” has the meaning given the term in sec-  
19          tion 8101 of the Elementary and Secondary Edu-  
20          cation Act of 1965 (20 U.S.C. 7801), except that  
21          such section shall be applied as if the term “State”,  
22          as it appears in such section, had the meaning given  
23          such term in this section.

24                   (2) **ELIGIBLE ENTITY.**—The term “eligible enti-  
25          ty” means—

1 (A) a public elementary school or sec-  
2 ondary school;

3 (B) a local educational agency; or

4 (C) a partnership between a nonprofit or-  
5 ganization and an entity described in para-  
6 graphs (1) or (2).

7 (3) GREEN ROOF.—The term “green roof”  
8 means a layer of vegetation planted over a water-  
9 proofing system or waterproof management practice  
10 that is installed on top of a flat or slightly-sloped  
11 roof that may support plant growth, including—

12 (A) an extensive green roof with a growing  
13 media layer that is up to 6 inches thick; or

14 (B) an intensive green roof with a growing  
15 media layer that is 6.0 to 48 inches thick.

16 (4) INDIAN TRIBE.—The term “Indian tribe”  
17 has the meaning given the term in section 4 of the  
18 Indian Self-Determination and Education Assistance  
19 Act (25 U.S.C. 5304).

20 (5) LOCAL EDUCATIONAL AGENCY.—The term  
21 “local educational agency” has the meaning given  
22 the term in section 8101 of the Elementary and Sec-  
23 ondary Education Act of 1965 (20 U.S.C. 7801), ex-  
24 cept that such section shall be applied as if the term

1 “State”, as it appears in such section, had the  
2 meaning given such term in this section.

3 (6) LOW-INCOME INDIVIDUAL.—The term “low-  
4 income individual” means, with respect to any cal-  
5 endar year, any individual who lives in a household  
6 that has a gross income that does not exceed 300  
7 percent of the poverty line.

8 (7) NONPROFIT ORGANIZATION.—The term  
9 “nonprofit organization” means an organization de-  
10 scribed in section 501(c)(3) of the Internal Revenue  
11 Code of 1986 which is exempt from taxation under  
12 section 501(a) of such Code.

13 (8) ONE-STOP CENTER.—The term “one-stop  
14 center” has the meaning given such term in section  
15 3 of the Workforce Innovation and Opportunity Act  
16 (29 U.S.C. 3102).

17 (9) POVERTY LINE.—The term “poverty line”  
18 has the meaning given the term in section 8101 of  
19 the Elementary and Secondary Education Act of  
20 1965 (20 U.S.C. 7801).

21 (10) SECONDARY SCHOOL.—The term “sec-  
22 ondary school” has the meaning given the term in  
23 section 8101 of the Elementary and Secondary Edu-  
24 cation Act of 1965 (20 U.S.C. 7801), except that  
25 such section shall be applied as if the term “State”,

1 as it appears in such section, had the meaning given  
2 such term in this section.

3 (11) SECRETARY.—The term “Secretary”  
4 means the Secretary of Energy.

5 (12) STATE.—The term “State” means each of  
6 the 50 States and the District of Columbia, each of  
7 territories, and each of the Indian tribes.

8 (13) TERRITORY.—The term “territory” means  
9 the United States Virgin Islands, Puerto Rico,  
10 Guam, American Samoa, and the Commonwealth of  
11 the Northern Mariana Islands.

12 (14) WEATHERIZATION.—The term “weather-  
13 ization” means the practice of protecting a building  
14 and its interior from the elements, particularly from  
15 sunlight, precipitation, and wind, and of modifying  
16 a building to reduce energy consumption and opti-  
17 mize energy efficiency.

18 **SEC. 7. AUTHORIZATION OF APPROPRIATIONS.**

19 (a) APPROPRIATION FOR GRANTS FOR PLANNING AS-  
20 SISTANCE.—There is authorized to be appropriated  
21 \$100,000,000 to carry out section 3 for each of fiscal  
22 years 2022 through 2026.

23 (b) APPROPRIATION FOR GREEN ROOF INSTALLA-  
24 TION.—There is authorized to be appropriated

1 \$300,000,000 to award grants under section 4(a) for each  
2 of fiscal years 2022 through 2026.

3 (c) APPROPRIATION FOR MAINTENANCE OF INFRA-  
4 STRUCTURE.—There is authorized to be appropriated  
5 \$100,000,000 to provide funds under section 4(e) for each  
6 of fiscal years 2022 through 2026.